Flight

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A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

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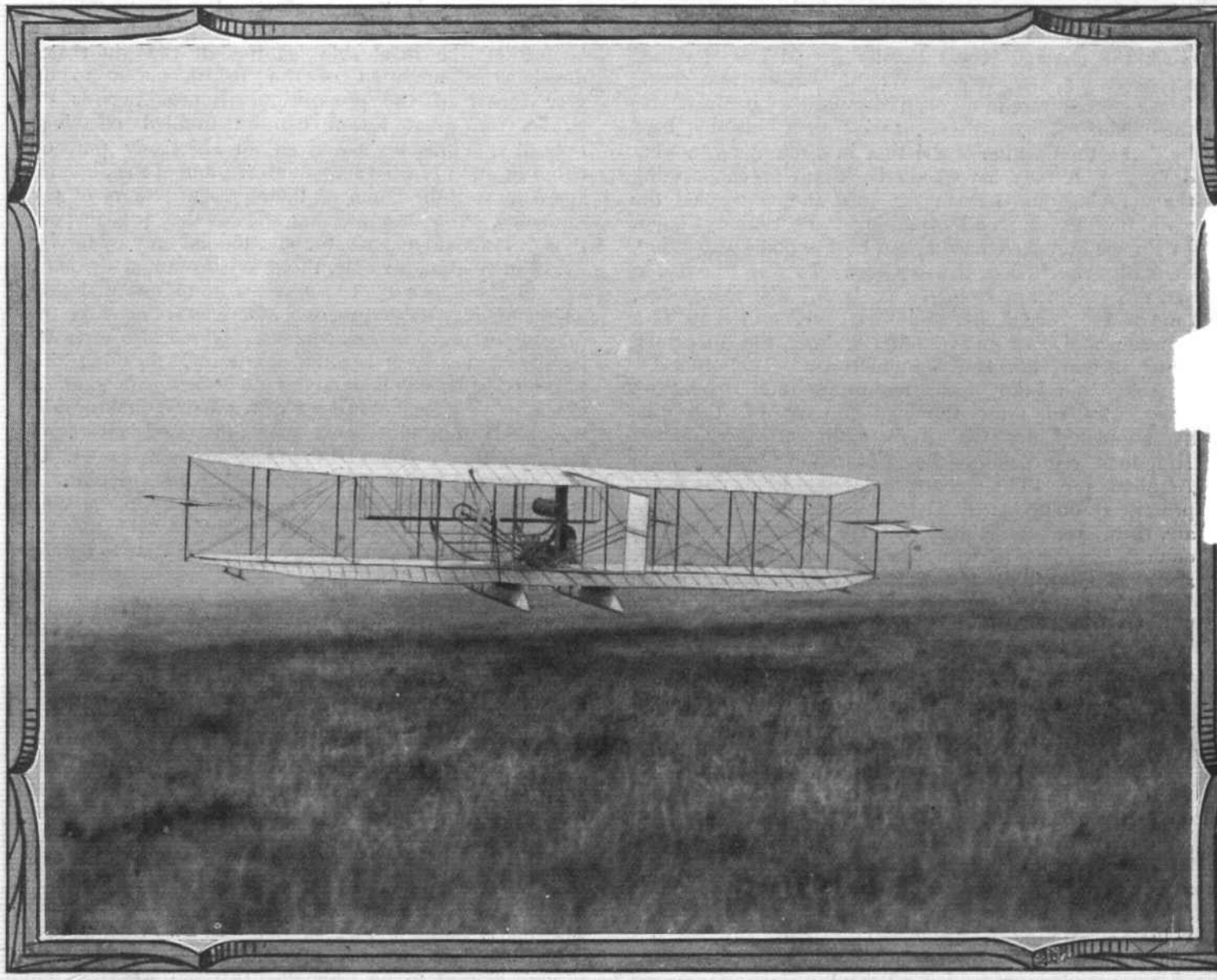


"Flight" Copyright Photo.

Mr. J. T. C. Moore-Brabazon in flight last week, at the Aero Club's Shellbeach Aerodrome, on his new all-British biplane, constructed by Messrs. Short Brothers.

Touching Enterprises Worthy of Support.

It is the duty of any organ that aims to foster a particular movement to keep an ever watchful eye for enterprises of two sorts—those that are to be encouraged and those that need exposing owing to their being detrimental to the cause. Flight has not shirked either side of that duty in the past, and does not propose to do so in the future. Than ourselves, none have been more to the fore, for example, in decrying the promotion of premature flying meetings, or, for that matter, in lamenting and pointing out the harm of running meetings for the money's sake. There are times and places when and where meetings should be held, and there are times and places when and where they should not be held. Even though it was none of our affair, we were unable to wax enthusiastic at any time over the Berlin Aviation Week, which unquestionably proved a very dull affair, whether or not it resulted in certain pecuniary gains. If one looks at the matter from the strictly commercial point of view, it is somewhat ironical that during last week the German Royal Family should have lavished attention on Mr. Orville Wright, whose remarkable performances were in quite an extraordinary contrast with the mediocre flights made at the "great" meeting hard by. But the position of aviation in Britain is somewhat different. If they have been backward in encouraging the aeroplane in Germany, at least they have led the world in fostering and exploiting the dirigible balloon. In France they have encouraged both schools of aviation, especially the heavier-than-air sort. In this country, as yet, the public are strangers to both. For this reason, though the season be somewhat late, and there is a nsequent risk of unfavourable weather, the Blackpool ing meeting is a laudable enterprise. The ground is itable, and the local authorities are striving in ery way to meet the requirements of the case as stipulated by the Aero Club of the United Kingdom, representing the Fédération Internationale Aéronautique. The meeting is one that holds out every promise of being beneficial to the cause in Britain. We are, therefore, heartily glad that the parent Club of this country has fallen in with the proposals to organise it, and has given full and unhesitating support to the Lancashire Aero Club, with which local body the Blackpool authorities are naturally and rightly in closest touch. We say these things being not unmindful of the suggestions put forward in some quarters that the Blackpool meeting is ill-advised owing to the probable absence of any British competitors this year, a contention that has been somewhat upset as soon as made, in that, firstly, there are to be a special series of important prizes confined exclusively to British competitors with British-built machines, and, secondly, quite a number of such competitors have signified intention already to compete.

Of course there is no doubt but that relatively small as is that section of the people in this country who take a pronounced and persistent interest in flight, the individuals composing it, or about to do so, are anything but concerted as yet, albeit such indications of dissensions as are abroad would be non-existent but for the ill-advised actions and ambitions of a minority. Curiously enough, those who, seemingly for their own ends, would stir up dissension in the ranks of flight advocates, even before those ranks are properly formed, have shown a tendency to go so far as to urge provincial clubs to refrain from a close relationship with the parent Club, on the imaginary score that "one more bad move" has been taken by it in connection with this aviation meeting. Yet a moment's reflection will reveal the ludicrous character of the suggestion in that the A.C.U.K. has taken it up in the very heartiest and closest co-operation with one of the most important of the provincial aeronautical bodies.

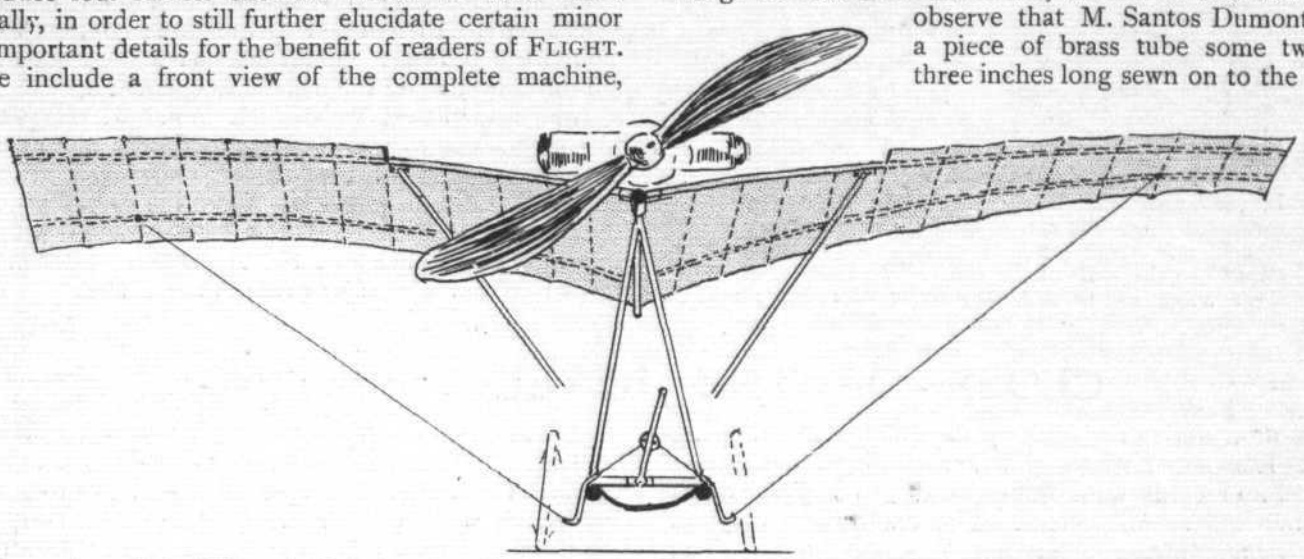
It gave us great pleasure to be able to record last week that so beneficent and scholarly an enthusiast as Mr. Patrick Y. Alexander has rendered yet another notably practical service to the movement in this country by offering a prize of £1,000 for a British-built motor of 20-h.p., which shall run continuously for twenty-four hours at that power in conjunction with fulfilling certain other practical conditions, such as represent actual service on an aeroplane. It is sure to be of immense value in giving a hearty impetus to those British manufacturers who have already "got right into this flying industry by attacking the very root of the problem," for it is one of the invaluable features of the gift that it directs the attention of the British public to the very kernel of the proposition. But as regards the public, the great lesson can be fulfilled effectively only if the masses are given an absolutely practical demonstration of what aeroplanes are, and of the direction and extents of the limits of their present powers of performance. Hence a meeting such as that at Blackpool, though it should chance to be attended only by foreign flying men—but, happily, there is substantial evidence that this will not be the case—is more essential than aught else to the progress of the movement in the immediate future in this country. It will also serve the incidental and very useful purpose of furnishing that priceless experience that comes of a first essay, and in the light of which alone we can hope confidently and reasonably to promote next year a mighty International flying-machine meeting of the most widely representative character and satisfactory sort from every standpoint.

We feel that the combined influence of flying meetings and of all-British prizes are really the complement the one of the other. But we are not so foolish as to let any exaggerated and therefore false display of patriotism blind us to the immediate value of the foreigner just now, any more than we would seek to weaken the prestige of any established British aeronautical body by glibly charging it with faulty policy. Just at the present time, it is useless to pretend that foreigners who can already fly have nothing to teach us for which it is worth while awarding prizes. And just at the present time it is all important for every enthusiast who would advance the cause of aviation in the British Isles to recognise the extent to which the future policy of any representative national body like the Aero Club depends upon *himself*. It is absurd, therefore, to condemn one British meeting this year, such as that at Blackpool, on the score that British prize-money will leave the country when it is badly wanted by our own experimenters at home. And it is even more absurd for anyone who has allowed himself to be persuaded that the A.C.U.K. will not properly safeguard all British interests to stand aloof from direct membership or from close associateship when his best and surest method of curing the imaginary trouble is to join its ranks and thus obtain a direct voice in all its doings.

FURTHER DETAILS OF SANTOS DUMONT'S No. 20

SUPPLEMENTING the very full illustrated description which we gave last week of the "Demoiselle," we now reproduce four further sketches which we have made specially, in order to still further elucidate certain minor but important details for the benefit of readers of FLIGHT. These include a front view of the complete machine, another showing the tail with its universal-joint, a third illustrating special fitments adopted for the tubular struts for the main girder, and the remaining sketch relating to the system of lacing adopted for the trailing edge of the main plane.

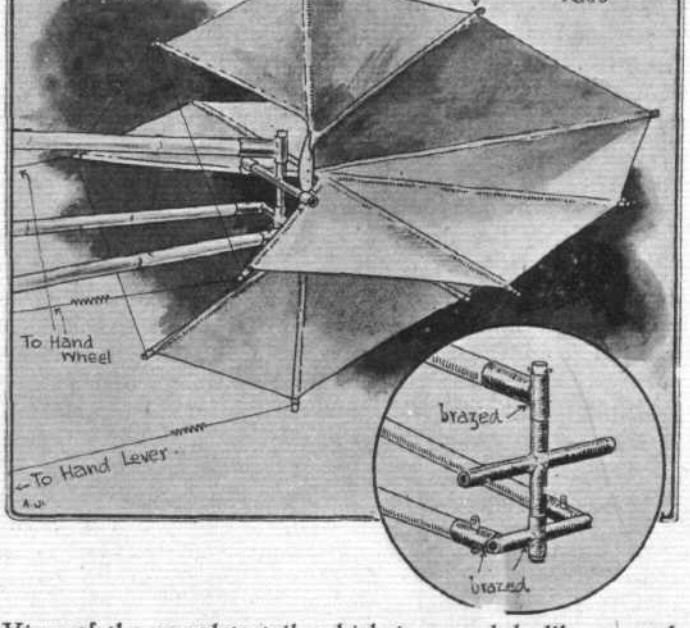
side of the aviator's seat. The centrally placed leve which lies behind the back of the pilot operates th wings as described last week, but it is interesting t observe that M. Santos Dumont ha a piece of brass tube some two o three inches long sewn on to the bac



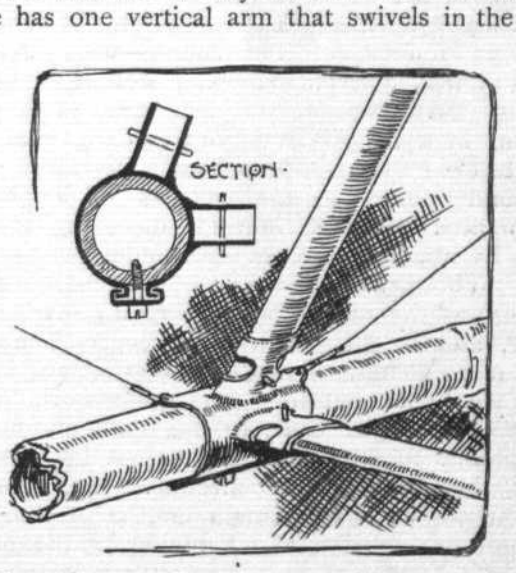
Front view of the "Demoiselle," showing the main stays for the leading edge of the wings as well as the warping wires passing from the seat.

of his jacket, so that when he is seated in place the tub slips over the lever in question and enables him to rel upon a positive action when he leans over to the right o left. In the same sketch, too, may be observed th position occupied by the two chassis wheels.

As regards the tail, this in itself is constructed with a bamboo rim as mentioned last week, but the universal swivel is formed entirely of pieces of tube, in the use o which the inventor is very clever. The intermediate T-piece has one vertical arm that swivels in the brased



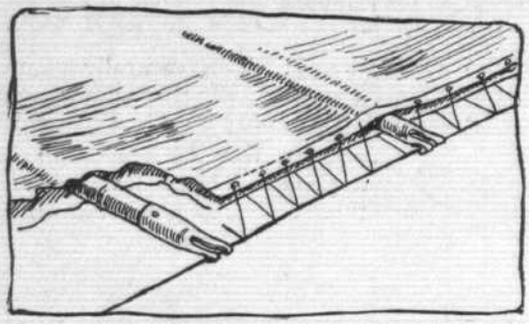
View of the complete tail, which is moved bodily upwards and downwards as well as sideways, about the special swivel-joint shown in greater detail in the inset.



Tubular struts of oval section fit into sockets brased on to thin metal collars in order to stiffen the main girder-frame. As will be observed above, these collars are rendered rigid with the main bamboos by means of small clamping plates and screws.

In the first of these illustrations two important points are brought out with special prominence. Firstly, the tubular stays which form the chief supports for the leading edge of the main planes, and secondly, the precise manner in which the operating-wires for warping the wings are run through small guide-tubes on either

sockets which couple up the main bamboos together, and the tail itself swivels upon the horizontal arm of the T-piece. Our sketch also shows the connecting-wires that pass to the hand-lever on the right and the hand-wheel on the left for elevating and for steering respectively, and also denotes the presence of the small helical springs



In the above sketch is shown the lacing by means of which the rear edge of the main planes is held taut about a strong wire, which is itself clipped to the ends of the ribs. The surfaces of the wings are in this way stretched tightly.

that automatically take up any slack or allow for any contractions in the operating-wires.

It will be remembered that we spoke last week of the ignition-switch that is fitted into the steering-lever for enabling the engine to be stopped at a moment's notice if necessary. In addition to the three controls for the monoplane proper, it should also have been stated that the throttle-valve on the engine is coupled up to a pedal conveniently placed for the left foot. In this way the two engine-controls can be manipulated, although the operator's hands need never leave the even more important lever and wheel on which the evolutions of his flyer depend so greatly. Our other illustrations with their inscriptions readily speak for themselves, and hence no further reference need be made to them here.

CLOSE OF THE BERLIN MEETING.

Although during the last four days of the Berlin flying week Rougier, Latham and Farman each made long flights, no records were broken, and so the proceedings became rather monotonous. The unfortunate disputes over money matters did not improve affairs. The semi-official announcement that the Bleriot monoplane was "seized" was subsequently officially denied, and, as a matter of fact, the machine was sent on to Cologne on the 30th ult. The poor organisation was, however, responsible for two further disputes on the penultimate day, when the aeroplanes of Senors Sanchez Besa and Edwards were detained, as it was alleged they had not fulfilled their contracts.

Taking up the story of the actual flying from where we had to break off last week, at the conclusion of Wednesday's proceedings, on Thursday, the 30th ult., the hero of the day was Latham, for he succeeded in improving upon Rougier's record for the distance prize, flying 33 rounds of the course—82·5 kiloms.—in 1 hr. 22 mins., and only stopping because of the falling darkness. An amusing incident arose out of this. Latham, in trying to land in the dark, was unable to quite clear a lamp-post, and when he did reach earth he found himself in the clutches of a policeman, who wanted to arrest him for damaging the lamp-post. Eventually, however, the committee set matters right. Those German polizei are real humorists. Rougier was the only other one to do anything noteworthy, and he flew with a passenger—Duray—to a height of 70 metres. Both Baron de Caters and Leblanc also made flights, but they were quite short. The following day Rougier came to the front, and his trip of 130 kiloms. for the distance was not improved upon before the end of the meeting. His time was 2h. 41m. 50s. and like Latham on the previous day he was only prevented from continuing by the gathering darkness. Farman also made an attempt for the distance prize, but he could only manage 33 laps, or 82·5 kiloms. in 1 hr. 30 mins. De Caters also made a dozen turns round the course, his time for the 30 kiloms. being 33 mins. 30 secs. At one time all these three flyers were in the air together, and the spectacle had all the appearance of a real race, as the machines were of similar type.

On Saturday last Farman made another attempt for the Distance Prize, but was unfortunate. After flying steadily for 1 hr. 3 mins. motor troubles began to develop, and he had to come down. Other than this the afternoon crowd had very little to see except a couple of short flights by de Caters and Molon. Rougier had dismounted his engine in order to make some adjustments, and it was well after five o'clock before he was ready to take the air again. Then, after a couple of trial flights to see that everything was in order, he went up with Duray and made five circuits of the track, 13·75 kiloms. in 17 mins. 27 secs. He afterwards took up Col. Pellé, one of the military attaches to the French Embassy, and flew with him once round the track. Very little out of the ordinary was done on the last Sunday, and although Latham hoped to be able to retrieve his misfortunes, he was doomed to disappointment. For some reason the motor on his machine could not be got to work properly until ten minutes after the closing time, when he flew to a height of 178 metres, but it was too late. Rougier made his try for the height prize earlier, and attained an altitude of 158 metres, sufficient to give him the first prize. He also made a splendid flight accompanied by M. Georges Prade, during which he rose to a height of 70 metres and completed a dozen circuits, or about 30 kiloms., in 36 mins. Farman made a gallant attempt in the distance contest, and kept going for two hours, but owing to one of the wings touching the ground after the first twenty minutes, the time officially recorded was not sufficient to improve his position. He also had a try for the passenger prize, but only completed one of the four laps.

Altogether the meeting was not quite the success it might have been, a result largely due to the want of proper organisation. One of the chief complaints levelled against the management was the long distance of the ground from the railway station, while the cheap seats were so far away from the grand stand that it was only possible to tell what was going on by the aid of glasses.

RESULTS.

Distance Prize.

1. Rougier (Voisin). Berlin Cup and 40,000 marks (£2,000) ... ... 130 kiloms.
2. H. Latham (Antoinette). 15,000 marks (£750) 82·5 ,,
3. H. Farman (Farman). 5,000 marks (£250) ... 80·09 ,,

If he had not touched ground at the 30th kilom. in his long flight, Farman's record would have been 110 kiloms.

Speed Prize (20 kiloms.).

1. H. Latham (Antoinette). 8,000 marks (£400) 18m. 46⅘s.
2. H. Farman (Farman). 2,000 marks (£100) ... 22m. 20s.
3. De Caters (Voisin) ... ... 22m. 47⅘s.

Altitude Prize.

1. Rougier (Voisin). 10,000 marks £500) ... 158 metres.
2. Latham (Antoinette). 5,000 marks (£250) ... 85 ,,

After the close of this event Latham flew to a height of 178 m.

Passenger Prize (10 kiloms.).

1. Rougier (Voisin). 10,000 marks (£500).

HOW TO GLIDE.

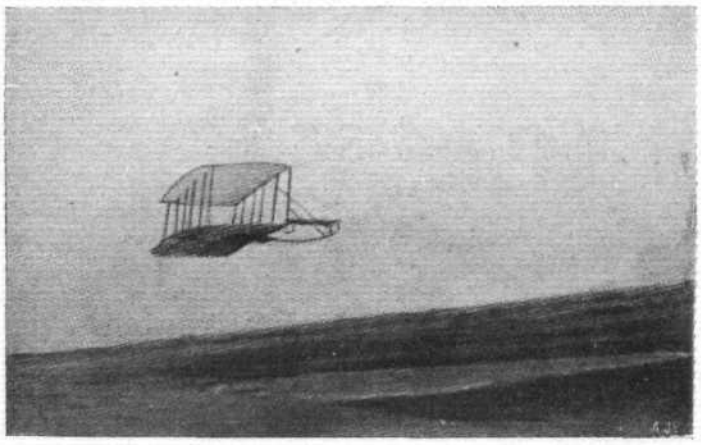
By WILBUR WRIGHT.

(*Continued from page* 608.)

Why We Dropped the Tail.

Our next work was to draw up the plans for a suitable machine. After much study, we finally concluded that tails were a source of trouble rather than of assistance; and therefore we decided to dispense with them altogether.

It seems reasonable that if the body of the operator could be placed in a horizontal position, instead of upright, as in the machines of Lilienthal, Pilcher, and Chanute, the wind resistance could be very materially reduced, since only 1 sq. ft. instead of 5 would be exposed. As a full ½-h.p. could be saved by this change, we arranged to try at least the horizontal position.



A high glide with the 1901 model, which had neither tail nor rudder, steering being effected by warping the wings.

Then the method of control used by Lilienthal, which consisted in shifting the body, did not seem quite as quick or effective as the case required; so, after long study, we contrived a system consisting of two large surfaces on the Chanute double-deck plan, and a smaller surface placed a short distance in front of the main surfaces in such a position that the action of the wind upon it would counterbalance the effect of the travel of the centre pressure on the main surfaces. Thus, changes in the direction and velocity of the wind would have little disturbing effect, and the operator would be required to attend only to the steering of the machine, which was to be effected by curving the forward surface up or down.

The Warping of the Wings.

The lateral equilibrium and the steering to right or left was to be attained by a peculiar torsion of the main surfaces, which was equivalent to presenting one end of the wings at a greater angle than the other. In the main frame a few changes were also made in the details of construction and trussing employed by Chanute. The most important of these were :—

(1) The moving of the forward main crosspiece of the frame to the extreme front edge;

(2) The encasing in the cloth of all cross-pieces and ribs of the surfaces;

(3) A re-arrangement of the wires used in trussing the two surfaces together, which rendered it possible to tighten all the wires by simply shortening two of them.

The First Chosen Site.

With these plans we proceeded in the summer of 1900 to Kitty Hawk, North Carolina, a little settlement located on the strip of land that separates Albemarle Sound from the Atlantic Ocean. Owing to the impossibility of obtaining suitable material for a 200 sq.-ft. machine, we were compelled to make it only 165 sq. ft. in area, which, according to the Lilienthal tables, would be supported at an angle of 3° in a wind of about 21 miles per hour.

On the very day that the machine was completed the wind blew from 25 to 30 m.p.h., and we took it out for trial as a kite. We found that, while it was supported with a man on it in a wind of about 25 miles, its angle was much nearer 20° than 3°. Even in gusts of 30 miles the angle of incidence did not get as low as 3°, although the wind at this speed has more than twice the lifting power of a 21-mile wind. As winds of 30 m.p.h. are not plentiful on clear days, it was at once evident that our plan of practising by the hour, day after day, would have to be postponed.

Our system of twisting the surfaces to regulate the lateral balance was tried, and found to be much more effective than shifting the operator's body. On subsequent days, when the wind was too light to support the machine with a man on it, we tested it as a kite, working the rudders by cords reaching to the ground. The results were very satisfactory, yet we were well aware that this method of testing is never wholly convincing until the results are confirmed by actual gliding experience.

Some Results of Tests.

We then turned our attention to making a series of actual measurements of the lift and drift of the machine under various loads. So far as we were aware this had never previously been done with any full-size machine. The results obtained were most astonishing, for it appeared that the total horizontal pull of the machine, while sustaining a weight of 52 lbs., was only 8·5 lbs., which was less than had previously been estimated for head resistance of the framing alone. Making allowance for the weight carried, it appeared that the head resistance of the framing was but little more than 50 per cent. of the amount which Chanute had estimated as the head resistance of the framing of his machine. On the other hand, it appeared sadly deficient in lifting power as compared with the calculated lift of curved surfaces of its size.

This deficiency we supposed might be due to one or more of the following causes :—

1. That the depth of the curvature of our surfaces was insufficient, being only about 1 in 22, instead of 1 in 12.

2. That the cloth used in our wings was not sufficiently airtight.

3. That the Lilienthal tables might themselves be somewhat in error. We decided to arrange our machine for the following year so that the depth of curvature of its surfaces could be varied at will, and its covering air-proofed.

The First Glide.

Our attention was next turned to gliding, but no hill suitable for the purpose could be found near our camp at Kitty Hawk. This compelled us to take the machine to a point four miles south, where the Kill Devil sand hill rises from the flat sand to a height of more than 100 feet. Its main slope is towards the north-east, and has an inclination of 10°. On the day of our arrival the wind blew about 25 miles an hour, and as we had had no

experience at all in gliding, we deemed it unsafe to attempt to leave the ground. But on the day following, the wind having subsided to 14 miles per hour, we made about a dozen glides.

It had been the original intention that the operator should run with the machine to obtain initial velocity, and assume the horizontal position only after the machine was in free flight. When it came time to land he was to resume the upright position, and light on his feet, after the style of previous gliding experimenters. But on actual trial we found it much better to employ the help of two assistants in starting, which the peculiar form of our machine enabled us readily to do, and in landing we found that it was entirely practicable to land while still reclining in a horizontal position upon the machine. Although the landings were made while moving at speeds of more than 20 miles an hour, neither machine nor operator suffered any injury. The slope of the hill was 9·5°, or a drop of 1 foot in 6. We found that after attaining a speed of about 25 or 30 miles with reference to the wind, or 10 to 15 miles over the ground, the machine not only glided parallel to the slope of the hill, but greatly increased its speed, thus indicating its ability to glide on a somewhat less angle than 9·5°, when we should feel it safe to rise higher from the surface. The control of the machine proved even better than we had dared to expect, responding quickly to the slightest motion of the rudder. With these glides our experiments for the year 1900 closed.

The First Year's Work.

Although the hours and hours of practice we had hoped to obtain finally dwindled down to about two minutes, we were very much pleased with the general results of the trip. For setting out as we did with almost revolutionary theories on many points, and an entirely untried form of machine, we considered it quite a point to be able to return without having our pet theories completely knocked on the head by the hard logic of experience, and our own brains dashed out in the bargain.

Everything seemed to us to confirm the correctness of our original opinion.

1. That practice is the key to the secret of flying.

2. That it is practicable to assume the horizontal position.

3. That a smaller surface set at a negative angle in front of the main bearing surfaces or wings will largely counteract the effect of the fore and aft travel of the centre of pressure.

4. That steering up and down can be attained with an elevator, without moving the position of the pilot's body.

5. That warping the wings so as to present their ends to the wind at different angles is a more prompt and efficient way of maintaining natural equilibrium than shifting the pilot's body.

The New Model.

When the time came to design our new machine for 1901 we decided to make it exactly like the previous machine in theory and method of operation. But as the former machine was not able to support the weight of the operator when flown as a kite, except in very high winds and at very large angles of incidence, we decided to increase its lifting power.

Accordingly the camber of the surfaces was increased to one-twelfth of the chord in order to conform to the shape on which Lilienthal's table was based, and to be on the safe side we also decided to increase the area of the machine, 165 sq. ft. to 308 sq. ft., although so large a machine had never before been deemed controllable.

The Lilienthal machine had an area of 151 sq. ft., that of Pilcher 165 sq. ft., and the Chanute double-decker 134 sq. ft.

As our system of control consisted in a manipulation of the surfaces themselves, instead of in shifting the operator's body, we hoped that the new machine would be controllable notwithstanding its great size. According to calculations, it would obtain support in a wind of 17 m.p.h., with an angle of incidence of only 3°.

The Shed.

Our experience of the previous year having shown the necessity of a suitable building for housing the machine, we erected a cheap frame building, 16 ft. wide, 25 ft. long, and 7 ft. high at the eaves. As our machine was 22 ft. wide, 14 ft. long (including the rudder), and about 6 ft. high, it was not necessary to take the machine apart in any way in order to house it. Both ends of the building, except the gable parts, were made into doors which hinged above, so that when opened they form an awning at each end, and left an entrance the full width of the building. We went into camp about the middle of July, and were soon joined by Mr. E. C. Huffaker, of Tennessee, an experienced aeronautical investigator in the employ of Mr. Chanute, by whom his services were kindly loaned, and by Dr. G. A. Spratt, of Pennsylvania, a young man who has made some valuable investigations of the properties of variously curved surfaces and the travel of the centre of pressure thereon. Early in August, Mr. Chanute came down from Chicago to witness our experiment, and spent a week in camp with us. These gentlemen, with my brother and myself, formed our camping party, but in addition we had in many of our experiments the valuable assistance of Mr. W. J. Tate and Mr. Dan. Tate, of Kitty Hawk.

The Second Model.

The machine was completed and tried for the first time on the 27th of July in a wind blowing about 13 miles an hour. The operator having taken position where the centre of pressure was supposed to be, an attempt at gliding was made, but the machine turned downward and landed after going only a few yards. This indicated that the centre of gravity was too far in front of the centre of pressure. In the second attempt the operator took a position several inches further back, but the result was much the same. He kept moving further and further back with each trial, till finally he occupied a position nearly a foot back of at which we had expected to find the centre of pressure. The machine then sailed off and made an undulating flight of a little more than 300 feet.

To the onlookers this flight seemed very successful, but to the pilot it was known that the full power of the elevator had been required to keep the machine from either running into the ground or rising so high as to lose all headway. In the 1900 model one-fourth as much elevator action had been sufficient to give much better control. It was therefore apparent that something was radically wrong, though we were for some time unable to locate the trouble.

(*To be continued.*)

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An Aero Exhibition at Milan.

A MOVEMENT has been started in Milan by *La Gazetta dello Sport* for the organisation of the first Italian Aero Show, to be held in Milan, commencing on November 1st next.

PARIS FLIGHT SHOW.

A SIGNIFICANT DISPLAY OF SPECIAL ENGINES.

MUCH as the flyers themselves must interest all visitors to the Salon, and pre-eminent as they are, of course, in importance, we feel that it is to the engines that English aviators would principally turn their attention, after making a more or less perfunctory "tour" of the stands, such as that upon which our "first impressions" of last week were based. There is a very good reason for this, inasmuch as it is the tardiness in the delivery of engines which has been the principal cause of our lost flight season in Britain. Had motors been forthcoming earlier, it is fair to say that a score or more of fledgling flyers would have been hopping about on English soil, and many of them well on the way to full flight ere this. Under the circumstances, therefore, we purpose devoting ourselves, without further delay, to a consideration of this section of the Show.

New Comers.

Just as it was impossible in one issue of FLIGHT to give anything like a complete account of the complete machines on view, so is it also out of the question to attempt more than a *résumé* of the display of motors in the present number. And it is a matter for considerable satisfaction that this should be the case, since it shows how the movement has already grown. The leading impression obtained from an inspection of the exhibits is that collectively they clearly betoken how completely the problem of the aviation motor has "caught on" among the automobile constructors of France—not to mention several leading firms at home. This, also, is as it should be, for none are better qualified to tackle it than those who have served a long apprenticeship in high-speed engine construction, and we welcome with undisguised pleasure the advent of some of the leading firms of car builders in the forefront of flight. Names like Darracq, De Dion, Panhard, Clement, Renault, Mors, and Aster lend more than a tone to the new industry: they imply rapid progress because they bring to bear a measure of experience, more especially in workshop practice where its value is immeasurably enhanced by tool-shop equipment of an essentially up-to-date order.

While they have this to help them, however, they are otherwise on a common level with others, for the problem of the flight engine is one of sufficient difficulty to make one and all investigate the possibilities underlying new ideas. It is not easy to construct a light engine which will work satisfactorily, so that the developments now going on constitute one of the most fascinating episodes yet introduced into the history of the high-speed internal-combustion engine. It is of the greatest possible interest, for instance, to see how one firm and another is unearthing systems which were discarded of old during the growth of the motor car.

Old Problems Revived.

Air cooling, horizontal cylinders, atmospheric inlet-valves, and such like methods are very much to the fore again, and designers are struggling with long-discarded problems with all the energy and keenness associated with the investigation of a new principle. If it were definitely proved that air-cooling is satisfactory, what a tremendous stride would have been made, but while there are examples enough of the principle, there remain an even larger number of skilful designers who fear to discard water; and what is more, many of these have tried the other system and failed. The problem of air-cooling is very largely a matter of whether it is really possible by any system of fans to get enough air to flow in contact with the cylinder walls in a given time to take away the necessary amount of heat. Some experts profess to believe that this is a fundamental impossibility, the makers of the Gnome engine say it is soluble only by making the cylinders revolve *en bloc*—a problem in itself—and others back their opinion that the difficulty is more imaginary than real by putting on the market air-cooled engines.

Steel Cylinders and Pistons.

This, the problem of air *versus* water-cooling, we have cited first as being one of the more evident of those which must occur to the uninitiated visitor whose interest in flight is limited to the prospective proprietorship of a flyer. The careful student of constructive methods will find another of equal interest and importance. This relates to the use of steel instead of cast iron for the construction of cylinders and pistons. Ordinarily, as in the construction of automobile engines, the cylinders are castings either made singly or more often in pairs, or again occasionally four *en bloc*. There is another method, however, by which they may be cut from a solid billet of steel, and this is the practice which is gaining favour among the makers of engines for flight. It is costly, as may well be imagined, but it offers possibilities in the way of light construction which are invaluable to a manufacturer whose great aim is to save weight by perfection of workmanship and materials rather than by the sacrifice of strength or the introduction of untried novelties.

For the same reason there are makers who have adopted steel pistons in conjunction with steel cylinders, and again some who use steel piston-rings. All this may sound very ordinary to the non-technical reader, but associated with these facts are several interesting problems into which it is not within our province at the moment to digress. Price is, perhaps, the factor which will appeal with the greatest force to the prospective purchaser, but in these early days, when the magic principle of "quantity production" has not yet an opportunity of making its beneficent influence felt in the flight industry, pioneers must expect to pay; a few failures to fan the fire of enthusiasm soon burns out discontent, to give place to desire for success.

Some Leading Makes.

There is, perhaps, no more difficult question to answer in the right spirit than that which is inevitably put by those who have not visited an Exhibition such as this themselves. Usually the question takes the form, "Was there anything to see at the Show?" Already we have indicated one of the most pleasing features, and that is the presence of so many exhibitors, each working at the engine problem with the greatest sincerity. But it may at this point be opportune to summarise quite briefly some of the leading engine exhibits, leaving the more complete descriptions to appear as space permits. Engines shown by some of the leading automobile constructors, some of whom have not previously given evidence of their interest in the work, naturally call for attention first.

There is Messrs. Darracq, for instance, who have aroused world-wide notice on account of the light twin-

cylinder horizontal engine which was used by Santos Dumont. It is a most interesting piece of design, and an example of the all steel construction previously commented on. As a type—horizontal opposed cylinders—it is almost unique, for only the Dutheil-Chalmers motors are also of this form. The larger Darracq engines are vertical, and have steel water-jackets, in which respect they differ from the small model, which has these members made of copper.

Messrs. Panhard and Levassor are building vertical engines having steel cylinders and corrugated copper water-jackets, their lightest model being rated at 35-h.p. The De Dion motors are to all intents and purposes of the same design as those used on their cars, and while they do not give the appearance of extreme lightness, they carry that most enviable reputation for workmanship and material that has characterised De Dion practice since the beginning of automobile history. In their two larger models, the De Dion engines are of the V type, but one of these, that rated at 35-h.p., is also destined to grace a car chassis next year. Messrs. Clement-Bayard, in their smaller model, demonstrate the practice of making the water-jackets partially of copper, as a means of reducing the weight of cast-iron cylinders. The same method is introduced, as our readers know, on the airship engines made by the Wolseley Co., who, together with Messrs. Green, are the sole representatives of our own country, and are to be congratulated on having thus early made their public appearance in the French arena. Needless to say, they thoroughly uphold the flag, and are easily in the front rank among all exhibits; indeed, the Green aeroplane engine is an example of thoughtful and original design which it is not easy to equal.

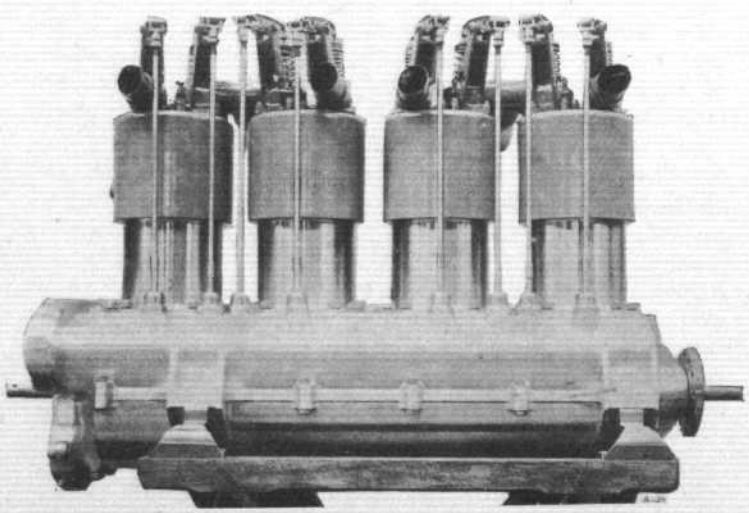
Messrs. Mors, another of the great French automobile firms to take up flight, have adopted the V form of engine and have made their accustomed excellent job of the construction. The model shown is rated at 45-h.p., but another is being built which will develop 25-h.p. The engines have atmospheric inlet-valves, as have many others. On the Aster stand is being shown an engine of 12-h.p. which originally appeared as the Aries, and was described as such in *The Automotor Journal* of April 17th, 1909. It is a 4-cyl. engine of *en bloc* construction, and is peculiar in having diagonal cylinders in a casting which appears externally to indicate the vertical type of motor.

The larger Aster engines are of more orthodox appearance, but still original in design. Messrs. E.N.V., who make a practice of electrolytically depositing their copper water-jackets, have brought out a smaller engine of 35-h.p. which should make a special appeal to those who have very naturally been attracted by their good past work but have found the only size hitherto available too large. The new engine is built on the same lines as its prototype. Messrs. Renault, whose designs have hitherto been confined to air-cooled engines, now appear with an additional model, which is water-cooled and has steel cylinders with copper jackets. Messrs. Fiat, who are also working at the air-cooling problem, have produced a small model of their standard V type, which has a particularly neat and compact appearance. Those pioneers of the V engine in light-weight construction—Messrs. Antoinette—make an imposing display of a model having 16 cylinders. Messrs. Brouhot, whose name also dates back a long way in automobile history, show a V engine having steel castings for the cylinders and pistons, copper jackets, and mechanically-operated valves, in the mechanism of which the operating-rods pull down to open the valves instead of *vice versa*. Messrs. Buchet make a vertical engine, of which the appearance is a little unusual owing to the water-jackets being built up in the box-form with flat sides of sheet copper.

In the Gregoire-Gyp engine, the water-jackets carry a vertical tubular radiator which seems, however, to be rather small if it is intended for use without supplementary cooling surface. Messrs. Bariquand and Marre, who make the engines for the Wright flyers to the Wright Bros.' designs, show a motor which is already well-known, but is nevertheless still one of the most striking exhibits at the Salon. Messrs. R. E. Pelterie have altered their engine materially by the introduction of separate mechanically operated valves in place of the combined valve used on earlier models. The change is an object-lesson in the difficulties which beset the designer of such innovations. No one has worked harder or more ungrudgingly on the development of an original type of engine for use in flight than M. Pelterie, and no one better deserves the ultimate full success which we hope he will attain. In principle his engine is unchanged, apart from the detail mentioned; it is still air-cooled.

Messrs. Anzani, whose engine drove the Bleriot flyer in the splendid cross-Channel flight, naturally stand in the front rank of makers of air-cooled engines, but they have now supplemented their hitherto standard type with a water-cooled model. This also differs radically in design from the 3-cyl. semi-radial motor in which air-cooling is employed, since it belongs to the 4-cyl. V class, and has its cylinders cast in pairs. It is a heavier and more powerful engine. Two fly-wheels are enclosed in the crank-chamber of this engine.

Among the very radical departures from all ordinary systems the Gnome rotary motor is a notable example, and it is impossible to do otherwise than admire the very thorough manner in which the makers of this engine have worked upon the many difficulties in the way of its successful operation. The effects of centrifugal force on the operation of the valves, and the lubrication of a rotating engine, are among the more important of such "trifles," which the makers have very wisely realised are only to be approached by the path of good workmanship. Another rotary engine, of very peculiar design, and suggestive of clockwork-like construction, is shown by Messrs. Breton.



PARIS FLIGHT SALON.—The 100-h.p. Darracq engine, with its separate steel cylinders and overhead valves.

In the C.A.M. engine, which has not hitherto appeared in public, there is a startling innovation in the form of aluminium pistons.

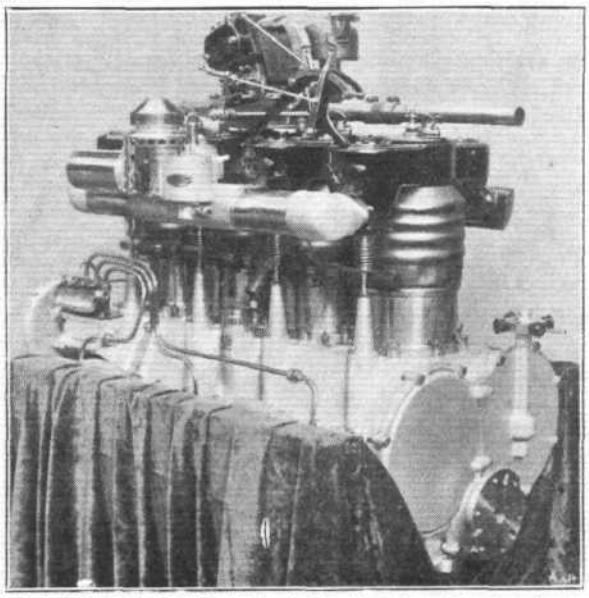
With these few remarks about the engines in general, we now proceed to give a brief description of each make under its own heading, and in conjunction with the accompanying illustrations :—

Darracq 50-h.p. (also 100-h.p.). — Four-cylinder engine of the vertical type, the cylinders, cylinder-jackets, pistons and piston-rings are made of steel. The cylinders are bolted to an ordinary two-part aluminium crank-chamber, which supports the crank-shaft on five bearings, and also encloses the gear-wheels which drive the single cam-shaft. Both valves are mechanically operated by rockers and push-rods; they are situated in a vertical position in the cylinder-heads. The inlet-valves are arranged in adjacent pairs, and their valve-chambers coupled together, so that a two-branch induction-pipe suffices for all four.

Dimensions.—Bore, 120 mm. ; stroke, 140 mm. ; weight, 175 kilogs. ; h.p., 50 at 1,500 r.p.m. ; price, 10,000 francs.

Bore, 170 mm. ; stroke, 140 mm. ; weight, 250 kilogs. ; h.p., 100 at 1,200 r.p.m. ; price 1,500 francs.

Panhard.—All the engines are of the 4-cyl. vertical type and have steel cylinders with corrugated copper



PARIS FLIGHT SALON.—The 120-h.p. Panhard engine, showing the unusual arrangement of the magneto.

water-jackets, soldered in place. The heads are made of cast iron and are fastened by four bolts, which pass through a flange on the upper end of the cylinder trunk. Holes in the flange permit the circulation of the cooling water without external pipes. The valves in all but the 35-h.p. model are arranged on opposite sides and are mechanically operated. On the small engine the inlet and exhaust-valves are combined in one concentric valve situated in the cylinder-head. On the largest 120-h.p. engine — that illustrated herewith — the magneto is mounted on a bracket above the engine and driven by bevels from a vertical shaft. The top of this shaft carries a centrifugal governor to govern the speed of the engine by operating on the throttle.

Dimensions.—185 mm. by 200 mm. ; weight, 380 kilogs. ; h.p., 120 at 900 r.p.m.

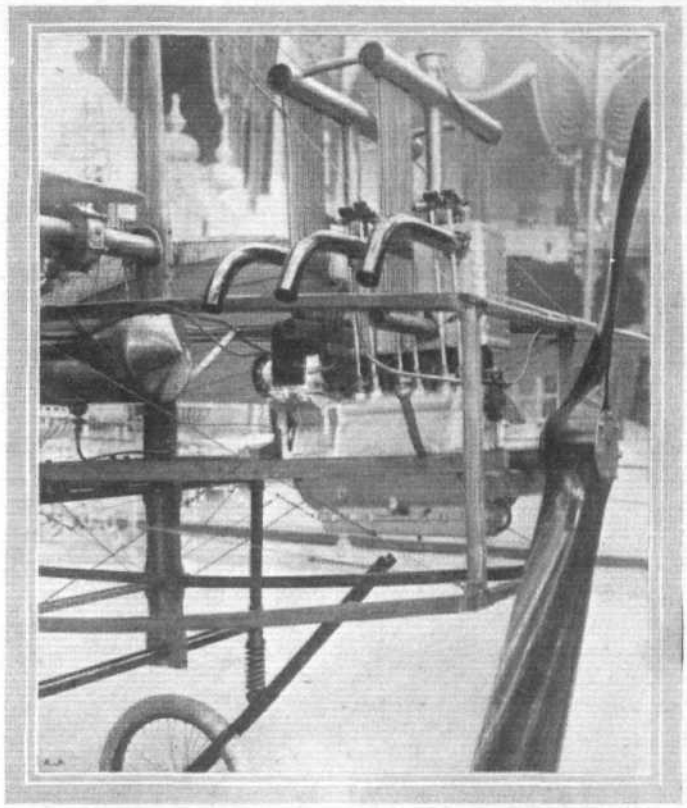
170 mm. by 170 mm. ; weight, 240 kilogs. ; h.p., 80 at 900 r.p.m. ; price, 9,000 francs.

125 mm. by 150 mm. ; weight, 214 kilogs. ; h.p., 35 at 900 r.p.m. ; price, 5,000 francs.

110 mm. by 140 mm. ; weight, 168 kilogs. ; h.p., 25 at 900 r.p.m. ; price, 4,400 francs.

110 mm. by 140 mm. ; weight, 90 kilogs. ; h.p., 35 at 1,000 r.p.m. ; price, 10,000 francs.

Gregoire-Gyp 40-h.p.—Four-cylinder vertical engine, cast *en bloc*, water-cooled; the water jackets are completed by flat aluminium plates, which gives the engine a box-like appearance. All the valves are in the cylinder-heads, and are operated by overhead rockers, worked by



PARIS FLIGHT SALON.—The 120-h.p. Gregoire-Gyp engine in place on its frame. The arrangement of the tubular radiator, built in as an integral part of the engine, is the special feature.

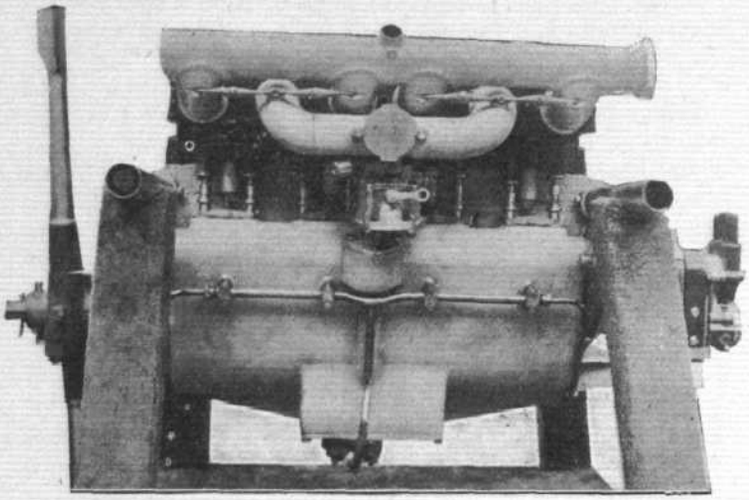
long push-rods from a single cam-shaft. The gearing for the cam-shaft and magneto is exposed. A vertical tubular copper radiator of small dimensions is built on to the engine in the manner illustrated by an accompanying photograph. The crank-chamber is a circular aluminium casting, with detachable steel end-plates, which carry the crank-shaft on ball-bearings; there is also a third ball-bearing in the centre. The cam-shaft drives a small gear-wheel pump for the circulation of the lubricating oil.

Dimensions.—Bore, 92 mm. ; stroke, 140 mm. ; weight, 79 kilogs. ; h.p., 40 at 1,500 r.p.m. ; price, 5,500 francs.

Aster 50-h.p.—Four-cylinder vertical engine cast *en bloc*, but having a separate sheet-steel water-jacket riveted in place. The cylinder-casting is fixed to the aluminium base-chamber by lugs situated about half-way up the cylinders, a considerable length of which, therefore, projects down inside the crank-chamber. The *desaxe* principle of offsetting the cylinders from the crank-shaft is followed. The valves are all mechanically operated, and are arranged on the same side of the engine.

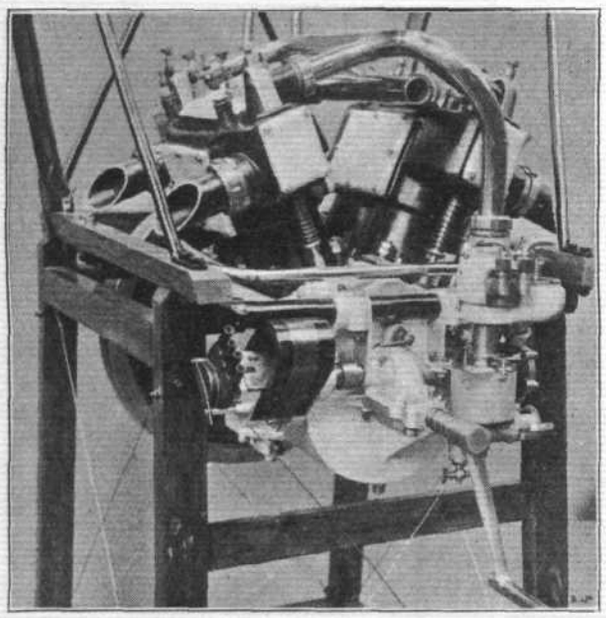
A neat arrangement of oblique shaft has been devised to simultaneously drive an oil-pump inside the crank-chamber and a water-pump outside. The latter is visible in the accompanying photograph. The crank-chamber is a one-piece casting, with detachable end-plates.

130 mm. by 140 mm.; weight, 110 kilogs.; h.p., 50 at 1,000 r.p.m.; price, 10,000 francs.



PARIS FLIGHT SALON.—The 50-h.p. Aster engine, showing the oil sump beneath the crank-chamber and the arrangement of the induction and exhaust-pipes.

Mors 45-h.p.—Four-cylinder V-type engine, cylinders cast in pairs, water-cooled, atmospheric inlet-valves. The valve-chambers are situated at each end of the cylinder-casting, which gives an unusual appearance to the engine. The exhaust-valves are operated by short cam-shafts enclosed in the crank-chamber; one cam-shaft serves two valves. A skew-gear driven transverse-shaft in front of the crank-chamber drives a magneto and water

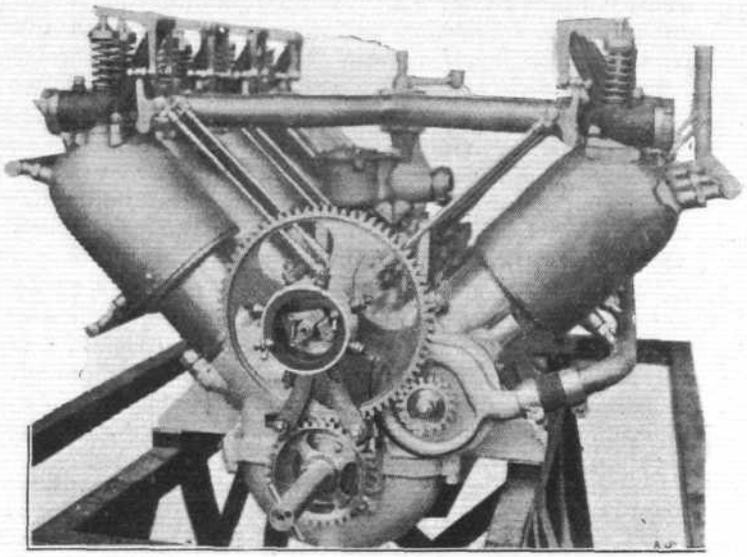


PARIS FLIGHT SALON.—The 45-h.p. Mors engine, showing the arrangement of the magneto, carburettor, and pump, all of which are situated at one end of the crank-chamber.

pump. Inside the crank-chamber is a plunger-pump which circulates oil through the crank-shaft.

Dimensions.—Bore, 100 mm.; stroke, 130 mm.; weight, 97 kilogs.; h.p., 45 at 1,700 r.p.m.; price, 7,000 francs.

Brouhot 60-h.p.—Eight-cylinder V-type engine, having separate steel castings for its cylinders, steel pistons, and steel piston-rings. Copper water-jackets are fastened by screws, which are afterwards flush riveted. Both inlet and exhaust-valves stand vertically above the cylinder-heads, and are mechanically operated by rocker mechanism, which is controlled from the single cam-shaft by tension-rods. This arrangement has been adopted as conducive to the saving of weight and space.



PARIS FLIGHT SALON.—The 60-h.p. Brouhot engine, showing the rocker mechanism for operating the valves.

There are five plain bearings supporting the crank-shaft, and these are lubricated from a pump beneath the base-chamber.

Dimensions.—105 mm. by 110 mm.; weight, 140 kilogs.; h.p., 60 at 1,400 r.p.m.; price, 10,000 francs.

PARIS AVIATION FORTNIGHT.

For the convenience of visitors from England, desirous of seeing the flying at the Juvisy aerodrome during the special meeting which commenced on Thursday last, the London, Brighton and South Coast Railway are running special 14-day excursions to Paris *via* Newhaven and Dieppe, besides cheap week-end tickets. Several trains are available, and application for details should be made to the Continental Manager at Victoria Station.

CHARLES JARROTT AND LETTS, LTD., TAKE UP AEROPLANES.

We learn from Mr. W. M. Letts that his firm, Messrs. Charles Jarrott and Letts, Ltd., have organised a department for aeroplanes, including a testing ground for clients, the manager of which will, from experience, be in a position to advise clients on any type of machine. Mr. Letts, moreover, claims to be one of the first firms to start in this business in a commercial way, he having placed an order for Wright machines as far back as last March, and paid deposits upon them, since when he has also put on order Antoinette and Bleriot machines, so that they are well in front for giving early delivery.

An aviation catalogue is already in the Press, and in the meantime prices and other particulars will be supplied upon application to 45, Great Marlborough Street.

During the Aviation Week at Blackpool Mr. Letts will be at the Clifton Hotel, Blackpool, and upon receipt of a line addressed to him there will be pleased to make appointments with intending purchasers, and supply them with all details, best prices, and dates for deliveries.

MR. CODY'S FLIGHT TO MANCHESTER.

As a result of his motor car trip to Manchester, Mr. Cody has been able to arrange a programme which he will endeavour to follow when he makes his attempt for the *Daily Mail* £10,000 prize. To eleven towns which lie contiguous to his route he has assigned numbers as follows :—

London ...	1	Derby	5	Stafford ...	9
Northampton ...	2	Sheffield ...	6	Stone ...	10
Birmingham ...	3	Stockport ...	7	Crewe ...	11
Leicester ...	4	Manchester ...	8		

At intervals along the route there will be signal stations where a white sheet, 100 ft. long, will be laid down and where men will be stationed having a big white flag bearing the number of the next large town. This flag will be waved for 10 secs., after which it will be pointed in the direction of the town, then waved again for 10 secs., and so on until the aeroplane is out of sight. These stations will be at :—

Three miles east of Rugby, a sheet pointing towards Nuneaton, also a man with flag marked 2 pointing it towards Northampton.

A sheet placed half-way between Nuneaton and Hinckley, pointing towards Stone. Two men with flags. One numbered 3 pointing towards Birmingham. One numbered 4 pointing towards Leicester.

Sheet between Tamworth and Ashby-de-la-Zouch, 5 or 6 miles from Tamworth, pointing towards Stone. Man with flag numbered 4 pointing towards Leicester.

Sheet 2½ miles south of Stone pointing towards Market Drayton. Two men with flags. One numbered 9 pointing towards Stafford. One numbered 10 pointing towards Stone.

Sheet 2 miles west of Nantwich, pointing due north. Two men with flags, one numbered 8 pointing direct towards Manchester, and one numbered 11 pointing towards Crewe.

Sheet 2 miles west of Northwich, pointing towards Manchester. Man with flag numbered 8 pointing towards Manchester.

In addition to these signals, smoke rockets will be sent by Messrs. Brock as soon as the aeroplane comes in sight at—

1. At London (point of departure).
2. Rickmansworth.
3. Leighton Buzzard.
4. Daventry.
5. Rugby.
6. Half-way between Nuneaton and Hinckley.
7. 1½ miles west of Nantwich.
8. At Westinghouse Water Tower, Manchester (finishing point).

To further aid the aviator on his journey, Capt. Windham has been arranging to have captive balloons at—

London (point of departure).
2 miles west of Harrow.
1 mile west of Rickmansworth.
Easterly outskirts of Berkhamsted.
Leighton Buzzard.
2 miles east of Daventry.
3 miles east of Rugby.
Abbots Bromley.
5 miles west of Stone.
Westinghouse Water Tower (Manchester).

On the 30th ult., Mr. Cody carried out a practice flight lasting 7 mins., during which Laffan's Plain and Danger Hill were twice encircled.

On October 6th Mr. Cody gave the necessary 48 hours' notice to the *Daily Mail* of his intention to make his attempt after twelve o'clock on Friday, 8th inst., and he hoped to actually start either this morning, Saturday, or to-morrow, according to the weather, from Wormwood Scrubbs.

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AERO CLUB OF THE UNITED KINGDOM.

OFFICIAL NOTICES TO MEMBERS.

Fixtures for 1909.

September 25–October 17 International Aeronautical Exhibition, Paris.
October 18th–23rd ... Blackpool Aviation Week.

Committee Meeting.

A meeting of the Committee was held on Tuesday, the 5th inst., when there were present: Mr. Roger W. Wallace, K.C., in the chair, Mr. Ernest C. Bucknall, Vice-Admiral Sir Charles Campbell, K.C.M.G., Mr. Martin Dale, Mr. John Dunville, Professor A. K. Huntington, Mr. V. Ker-Seymer, Mr. J. T. C. Moore-Brabazon, Mr. C. F. Pollock, Hon. C. S. Rolls, Mr. Stanley Spooner, H. E. Perrin (Secretary).

New Members.—The following new Members were elected :—

J. Boyd-Carpenter.
Abel Buckley.
James William Butler.
H. G. Byng.
H. Carver.
Henry Corsellis.
Col. T. Cowper-Essex.
Claud Crompton.
Lieut. Arturo Cueto.
Henry Edmunds.
Sir Charles Stewart Forbes, Bart.
Arthur Foster.
Capt. John Duncan B. Fulton, R.F.A.
Engineer Lieut. A. Sydney Gush.
Charles S. Henry, M.P.
Mrs. F. A. Hetherington.
Mrs. H. A. Merriel Hetherington.
J. M. Llewellyn.
A. F. Milne-Wilson.
W. R. Pidgeon.
Capt. H. C. Simpson, R.A.
Frank Bright Summers.
Lieut. M. B. Talbot-Crosbie.
Lionel Van Praagh.

Blackpool Aviation Week.

The Blackpool Aviation Meeting commences on Monday, the 18th inst., and continues throughout the week. *Members of the Aero Club will be admitted free to the Enclosure on production of their membership cards.*

Seats in the Grand Stand may be booked at £3 3*s.* to £5 5*s.* for the whole week. Application for these seats must be made direct to the Aviation Committee, Town Hall, Blackpool.

The London and North-Western Railway propose to run special excursions, leaving Euston on Sunday midnight, the 17th inst., for three or six days; Tuesday, the 19th inst., for one or four days; and Friday, the 22nd inst., for one day. Full particulars can be obtained at the railway stations.

Full particulars as to the hotel and other accommodation may be obtained from the Secretary, Aviation Committee, Town Hall, Blackpool. Several announcements offering accommodation direct appear in the advertisement pages of FLIGHT, to which refer.

Timekeepers for Blackpool.

The Committee of the Aero Club have nominated the following timekeepers for the Blackpool Aviation Meeting :—Mr. A. V. Ebblewhite, Mr. C. P. Glazebrook, Mr. T. D. Dutton.

Official Timekeepers.

The Aero Club have appointed the following official timekeepers :—

Mr. F. T. Bidlake.
Mr. J. H. Burley.
Mr. T. D. Dutton.
Mr. A. Deacon.
Mr. A. V. Ebblewhite.
Mr. A. Fattorini.
Mr. C. P. Glazebrook.
Mr. H. Hewitt Griffin.
Mr. J. B. Hyland.
Mr. A. Geo. Reynolds.
Mr. J. E. Rhodes.
Mr. F. Straight.
Mr. H. J. Swindley.
Mr. A. J. Wakeford.
Mr. J. A. Walker.
Mr. C. Wheelwright.

Proposed Doncaster Week.

A special meeting of the Committee of the Aero Club was held on Wednesday, October 6th, 1909, to consider the application received from the Doncaster Corporation. It was decided to inform the Doncaster Corporation that as the proposed meeting clashed with Blackpool, which had already received the sanction of the Aero Club, the Committee regretted that they could not see their way to give their sanction to any other competitive meeting during the same period.

HAROLD E. PERRIN, Secretary.

The Aero Club of the United Kingdom,
166, Piccadilly, W.

PROGRESS OF FLIGHT ABOUT THE COUNTRY.

(NOTE.—Addresses, temporary or permanent, follow in each case the names of the clubs, where communications of our readers can be addressed direct to the Secretary.)

Aerial League (CARLTON HOUSE, REGENT STREET, S.W.).

AT the extraordinary general meeting of the Aerial League of the British Empire, Lord Esher, as we announced last week, was unanimously elected President. Captain Cave Brown Cave presided over the meeting, and in moving the election of Lord Esher said the Committee considered that the time had arrived to establish the Aerial League in such a permanent position that in the future it would necessarily play a prominent part in aviation and aeronautics generally in the British Empire, and also settle any difficulties that might arise with regard to customs or infringements of international law. He was authorised to say that it was proposed by Lord Esher to hold a public meeting at a convenient date, to be announced later, when he would make a statement concerning the aims and policy of the League in full detail.

The motion was seconded by Col. H. S. Massy, and carried by acclamation.

The Chairman then announced that a Council had been appointed by the Executive Committee which was broadly representative of all the greatest interests in the Empire, and power had been taken to strengthen it in the future. This Council would consist of Lord Esher (the President), one representative each from the City (the Lord Mayor), the Admiralty (Capt. Stuart Nicholson, Assistant-Director of Torpedoes), the War Office (Col. J. P. Du Cane), the Board of Trade (Col. H. A. Yorke, Chief Inspector of Railways), two from the legal profession (Lord Desart and Mr. H. Baker), one representing Australia (Capt. Muirhead Collins), one representing New Zealand (Mr. Hall Jones), two representative landowners, two gentlemen connected with the Press, other representatives of the Dominions overseas, and nine ordinary members of the League.

Sir Charles Wakefield then moved: "That the Council appointed by the Executive Committee for the consideration and direction of matters affecting the general policy and welfare of the League be, and it is hereby, adopted as the Council of the League, subject to the regulations which have been approved by the Executive Committee."

Sir C. Euan Smith seconded the motion, and it was carried.

On the proposal of Mr. B. S. Straus, M.P., seconded by Capt. T. Tulloch, it was decided to add six members to the Executive Committee. Votes of thanks to the Chairman and to Col. H. S. Massy on his retirement from the Presidency of the League, brought the meeting to a close, but just before those present actually dispersed, Mr. P. Y. Alexander made his offer of a £1,000 prize for British engines, referred to in our last issue.

Birmingham Aero Model Club (62, ALBION STREET).

A MEETING of the club was held at the People's Hall, Hurst Street, under the presidency of Mr. Homer. Mr. R. Cobham, who is acting as Hon. Sec. *pro tem.*, said that if all the promises were realised the club would have an excellent membership to commence with, and included among those who handed in their names were some of the most skilled and learned men of the city. Most of the important trades of the Midlands were represented. With such a combination of skill and knowledge, the club should go far to solve the aerial flight problem. When the organisation was on a stronger footing they hoped to get many honorary members, and in that case a fund of £50 or so would soon be forthcoming to fit up a modern workshop with all appliances. All the latest writings on aeronautics would be at the disposal of the members.

Kite-Flying Association (27, VICTORY ROAD, WIMBLEDON).

GOOD entries have been received for both the competitions, which are to take place on Wimbledon Common this afternoon (Saturday). For the Youths' Competition, for prizes presented by the Aero Club, which commences at 2 o'clock, twenty-three entries have been received, while the demonstrations by the several entrants in the suggestion competition should prove exceedingly interesting. Among the suggestions of the entrants are kite photography, signalling, life saving or ship to the shore, elevating beacon flares to serve as distress signals by land or sea, &c.

Liverpool Aviation Society (1, EXCHANGE STREET, WEST).

AT the first general meeting, held at the Carlton Hotel on the 29th ult., it was announced that the membership had grown to 134. Mr. W. P. Thompson presided over a large and enthusiastic gathering. Mr. P. L. Chalier submitted for consideration a syllabus of lectures which he had arranged provisionally for the winter season. This included fortnightly lectures to the society by eminent men in the aviation world and by members of the society, and also a series of lectures for the general public. Amongst those who had consented to lecture were Capt. Windham, Mr. Cody, Messrs. W. Mines, Edmund Gormly, W. P. Thompson and Hesketh Walker.

This as well as the question of affiliation was referred to the General Committee for consideration.

Mr. Priest reported that the Committee had accepted the kind offer of Mr. M'Guffie of ground at Woolton for the purpose of an aerodrome. They hoped that before long some serious effort would be made there to prove that the Society was doing something tangible in connection with the art of aviation.

Manchester Aero Club (9, ALBERT SQUARE, MANCHESTER).

THIS enterprising Club, which was only formally inaugurated on September 9th, has already 300 members. The Committee announce that the privilege of exemption from entrance fee (one guinea) is now withdrawn, so that all future entrants will have to pay £2 2s. on joining. Sub-committees have been formed to look out for suitable premises, and to arrange an exhibition of working models about Christmastime. A course of lectures is also being arranged. Colonel Sir Lees Knowles, Bart., Colonel Sir Charles Allen, the Lord Mayor of Manchester (Alderman Holt), the Lord Mayor elect (Councillor Charles Behrens), and Mr. E. Hulton, have all consented to act as Vice-Presidents, in addition to those elected on September 9th, viz., Mr. F. Ashworth, President of the Chamber of Commerce, Mr. W. Joynson-Hicks, M.P., and Mr. Harry Nuttall, M.P.

Midland Aero Club (THE BUNGALOW, STECHFORD, BIRMINGHAM)

THE inaugural work in connection with this Club being now completed, the Committee have been able to turn their attention to other matters, and already a very strong programme has been drawn up for the winter season.

On the 13th inst. a general public meeting will be held, at which a report of the proceedings of the Council will be placed before the meeting. The rules, &c., will be submitted for final approval, and three short papers will be given. One by Mr. A. P. Maxfield, a member of the Council of the Club, on "Making and Testing an Aeroplane;" a paper by Mr. W. Ivy-Rogers, "Impressions of a Flight with Cody"; and the third by a member from Wolverhampton, on "The Making of a Monoplane."

On the 30th inst. an Exhibition of Models of all kinds will be held, open to all makers of models, and prizes will probably be offered.

On November 13th, weather permitting, an open Model Flying and Gliding Contest will take place in Sutton Park. All those desiring to enter for the last two events should communicate with the Secretary at once.

On December 11th a Dinner will take place at the Grand Hotel. Further and full particulars may, of course, be had on application to the Secretary.

The club has been honoured by the following gentlemen accepting the office of Vice-President:—The Right Hon. Austin Chamberlain, M.P.; Sir Gerald Muntz, Bart.; Sir Benjamin Stone, M.P.; Sir Henry Norman, M.P.; Neville Chamberlain, Esq., J.P.; F. W. Lanchester, Esq.; J. Norton Griffiths, Esq.; and Ballin Hinde, Esq. A substantial offer of donations has been made, and during the past week a deputation has been received by the Mayor and Corporation of Sutton Coldfield with a view to Sutton Park being used as aviation ground. This for a club of four weeks is an encouraging indication.

S.W. England Aeronautical Soc. (51, ST. LEONARD'S RD., E. SHEEN)

THE second general meeting was held on October 3rd, when many new members were elected, and after consideration the question of affiliation or alliance was left in the hands of the committee. The secretary reported that Messrs. S. F. Cody, A. V. Roe, W. Cochrane, T. W. K. Clarke, H. H. Giffard and Dr. Boyd had joined. It was decided that the premises to build the machines in were to be chosen this week, and a glider to be put in hand immediately. A demonstration of the "Aerolite" petrol motor was given. A model demonstration is being arranged, the date of which will be published next week.

Yorkshire Aero Club (59, WADE LANE, LEEDS).

IT has been decided that Club rooms should be engaged without delay, and the idea is that Members should meet every Tuesday evening, and for the second and last Tuesday in each month a lecture or discussion should be arranged. The Club has had under consideration a suggestion from the Morecambe Aero Club that they should co-operate in promoting a Flying Week at Morecambe.

BLACKPOOL AVIATION MEETING.

ALREADY the task of preparing the flying ground at Blackpool is well in hand, and the work of erecting the grand stands and sheds is being pushed on rapidly. It has been decided to extend the course so that it now measures 4 kiloms. 20 metres round instead of 3·3 kiloms., as originally laid out. The method of flying the course has also been revised, and the start will now take place from the western corner, the competitors flying towards Middle Lane, and then turning to the right in the direction of St. Anne's.

It has been decided that the charge for motors entering the ground shall be 5*s.* a day or one guinea a week, providing the passengers have tickets for the grand stand or paddock.

Definite contracts, outside any British competitors who may take part, it is stated, have been made with Mr. Henry Farman, MM. Rougier, Paulhan, Dufour, Defiers, Baratoux, Sanchez Besa and Edwards, while MM. de Riche, Dutrix and Leblanc will in all probability also decide to take part. On the other hand, negotiations with Mr. S. F. Cody have been abandoned, and it is rumoured that he will *not* be amongst the flyers at Blackpool.

On Saturday last it was announced that the Committee in charge of the meeting were committed to an expenditure of £20,000, and towards this £11,000 had been subscribed apart from the £7,000 offered by the Lancashire Aero Club. This offer has now been accepted, and the Lancashire Club will nominate half the members of the Management Committee. Prizes to the value of £6,150, as recorded in our last issue, are being offered, and in addition the *Daily Mail* £1,000 prize for a circular mile flight, the £500 Gold Cup offered by Sir David Salomons, and the Michelin £1,000 prize will be open for competition. With a view to encouraging the development of the slow-speed machine, the proprietors of the *Manchester Guardian* have offered a cup which will be awarded to the aviator who makes the slowest time during the meeting over one circuit of the course. This, it is thought, may induce some of the aviators to fly when the conditions would not be favourable for the distance, speed, or height competitions; as, for instance, when the wind was strong, so as to get the advantage of a slow head-to-wind flight on one side of the course.

Among the recent large contributions towards the funds may be noted the items of £105 to the prize fund and £300 to the guarantee fund from the Hotel Metropole, and £100 to the prize fund from Messrs. Daniel Thwaites and Co.

Mr. V. Ker-Seymer has accepted the position of Hon. Secretary to the Meeting.

Accommodation at Blackpool.

IT was certainly a smart move on the part of the Motor Club, securing the whole of the Queen's Hotel, South Shore, Blackpool, for the use of their members and friends during the flying week. Reasonable and inclusive prices have been fixed for the whole week, practically amounting to £5 5*s.* per person and "all found." Those who delay to secure rooms from the Secretary of the Club under these conditions may find that their position in the allotment in "priority of application" will be outside the holding capacity of the hotel. In like manner, other intending visitors should arrange early for their rooms elsewhere, as places are filling up rapidly, although no doubt there will be plenty of good boarding-house accommodation obtainable for a time. As an example we understand that mine host Moon, of the Buckingham Hotel, Claremont Park, is very nearly booked up, and has already arranged for an additional large establishment situated in Claremont Park. Little wonder when the proprietor informs us that M. Bleriot has written him that he will stay at the Buckingham if he goes to Blackpool, whilst Mr. Henry Farman may also be expected to be there.

The Travel Department of Messrs. Pickfords (the well-known carriers) announce facilities for booking passengers by all railways to Blackpool and neighbourhood for the Aviation Week at special rates. If applied to early, they can also arrange hotel accommodation in Blackpool, St. Annes-on-Sea, or Lytham. The principal ticket office in London is 37, Sloane Street, and telephone inquiries to 1066 Kensington will be promptly answered.

PROPOSED MEETING AT DONCASTER.

IT will be seen from the official notices on page 627 that the Committee of the Aero Club, after consideration of an application by the Doncaster Corporation, have decided that they cannot sanction a second competitive meeting during the same period. This course is undoubtedly the only correct one to have taken, and we are glad to see that it is applauded by practically the whole of the responsible Press of the kingdom which has consistently followed and endeavoured to assist the progress of flight in this country. One and all have raised their voice in deprecation of this clashing of fixtures and the harm which is bound to ensue from endeavouring to organise such meetings at very short notice. Lieut.-Col. F. C. Trollope, a Vice-President of the Aeronautical Society, in a letter to the Press, puts the matter quite clearly from an unbiased point of view. Lieut.-Col. Trollope's letter reads as follows:—

"In the best interests of aviation in this country it seems incredible that official sanction can be given for a flying meeting—whether for competitions or merely for exhibition flights—at Doncaster, to run concurrently with the Blackpool Aviation Week. Considering the scarcity of prominent aviators, it is palpable that such a proceeding is bound seriously to prejudice the success of both meetings, and if for no other reason should be banned.

"A parallel case would be exemplified by the Jockey Club authorising race meetings to be held at Kempton Park and Sandown Park on the same day, which, of course, they would never agree to.

"Both from a sporting and a common-sense mercenary view, therefore, it seems highly desirable that the Doncaster affair should not be allowed to clash in any way with Blackpool's dates fixed long ago."

Should actual competitions be held at Doncaster, and the meeting consequently be proclaimed, it will become a very serious question for the consideration of the aviators who have been announced to take part, as if they persist in competing in spite of this they will find they are disqualified from taking part in any International competitions *throughout the world*. Among those whose names have been mentioned, and who will thus be seriously affected, are Mr. S. F. Cody, MM. Sommer, Delagrange, Le Blon, Prévot, Moron, Scherck, and Moreau.

THE COLOGNE MEETING.

During the first day of the flight meeting at Cologne, M. Bleriot had matters all his own way, as he was the only aviator to put in an appearance on the Merheim racecourse on the 30th ult., when he flew twice, the first time going round for 3 mins., and the second for 22 mins. On the following day M. Bleriot made a record flight for himself by flying for 63 mins., during which he covered 68 kiloms. He was timed to cover 60 kiloms. in 55 mins. Paulhan made four turns of the course but did not get quite clear of the ground and damaged the left planes of his machine. This damage, however, was quickly set right, and on Saturday last Paulhan made amends. The weather was ideal, and a large crowd assembled. First Paulhan went round the course four and a half times in 6 mins., then Bleriot kept going for ten rounds. This was followed by another short trip by Paulhan and two more similar ones by Bleriot, and then Paulhan started on his long flight. During the first ten rounds he kept fairly low, but afterwards he gradually rose until a height of about 50 metres was reached. He remained in the air for 37 mins. 32 secs., and was loudly applauded when he came down. Last Sunday the wind and rain played havoc with the flyers' intentions, but both Paulhan and Bleriot made several short flights, and Dufour also flew for a short distance in a straight line on his Farman machine. Bleriot intended to beat his own record, but motor trouble caused him to descend after 7 kiloms., and Paulhan also had to stop prematurely owing to the cracking of a cylinder. Repairs were made overnight, and the next day the only thing worth mentioning was a passenger flight by Paulhan, who carried a passenger during four rounds of the course. Both Bleriot and Paulhan made several short flights, as also did Bregi on his Voisin.

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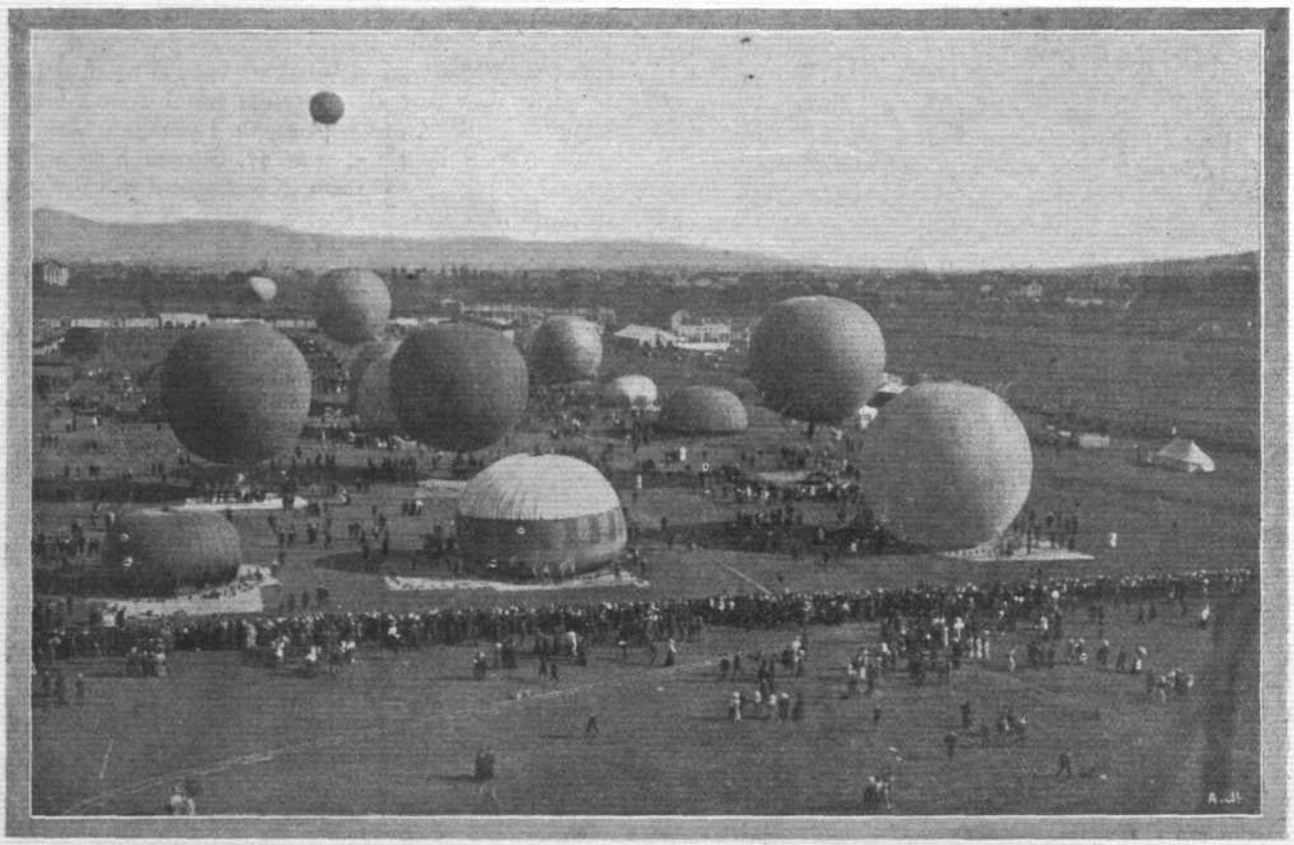
GORDON-BENNETT BALLOON RACE.

At the start of the fourth race of the Gordon Bennett Race for Balloons from Zurich on the 3rd inst., seventeen balloons actually got away, and at the time of going to press it appears certain that the victory rests with the sole American representative. All the balloons went off in a north-easterly direction across Germany, and Mr. Mix, in the "America II" outstripped them all by carefully husbanding his ballast, and eventually reached Gutova, just north of Warsaw. Leblanc, in his "Ile de France," one of the French representatives, travelled the next greatest distance, landing at Zargriva; while Schaeck, in the "Helvetia," was third on behalf of Switzerland, he coming down just beyond Strelitz.

Of the twenty entries, the three which did not start were the two representatives of Spain and one of Italy. Thus the countries to be represented by teams of three were Switzerland, Germany, France and Belgium. Two balloons carried the Italian flag, while Great Britain, the United States and Austria each relied upon a single balloon. The British representative was the "Planet," piloted by Mr. F. MacClean, and he was accompanied by Mr. Mortimer Singer. It came down at Kolpino, near Reichnau, in Bohemia. The proceedings at the start of the race were enlivened by the appearance of the "Parseval" airship, which made a voyage from Schlieren.



GORDON-BENNETT BALLOON TROPHY.—General view of the competing balloons for each country on the starting grounds at Zurich for the race which started last Sunday.

AVIATION NOTES OF THE WEEK.

Mr. Moore-Brabazon's Progress.

ON Thursday of last week Mr. Moore-Brabazon did not meet with quite so great success as he obtained three days previously, and the longest distance flown was 400 yards. As the result of a sudden landing the machine was slightly damaged. We are able to give several views of this machine this week which give a good idea of its general appearance and clearly illustrate its characteristic features. We were fortunate in securing a snap of the machine during one of its brief flights last week, and this forms the frontispiece for the current issue. Mr. Moore-Brabazon has entered for the *Daily Mail* prize of £1,000 for the first British aviator on an all-British machine, covering the circular mile; as soon as he can get his new Green engine installed he will make an attempt for the prize, and there seems every likelihood of it being annexed very shortly now.

Hon. C. S. Rolls and his Wright Flyer.

HAVING at last got the motor fitted on his Wright flyer, the Hon. C. S. Rolls had one or two satisfactory short flights at Shellbeach last week, but they were, unfortunately, concluded by a slight accident. On leaving the starting rail, the elevator was apparently placed at too great an angle, causing the machine to shoot up sharply. Mr. Rolls cut off the ignition, and the flyer came down on the right wing, breaking it, as well as damaging the propellers.

Mr. Roe Moves to Richmond.

IN view of the many restrictions imposed on him, Mr. Roe has decided to discontinue his experiments at Leyton. He has been able to conclude arrangements with the authorities at the Old Deer Park at Richmond, and he hopes to meet with better success there.

A Meeting for Eastbourne.

AT a meeting of the Eastbourne Town Council the question of making this district an aviation centre was considered and a committee appointed to investigate the possibilities of such a scheme. It was stated that the Duke of Devonshire would support the proposal.

The F.A.I. Conference.

A COUPLE of days before the Gordon-Bennett Balloon Race the Federation Aeronautique Internationale opened their fifth Conference at Zurich. Prince Roland Bonaparte was unanimously elected President of the Conference, and Mr. Roger Wallace (Great Britain), Mr. Cortlandt Bishop (U.S.A.), Herr Busley (Germany), Prince Borghese (Italy), Comte de la Vaulx (France), and M. Jacobs (Belgium) were elected Vice-Presidents, while Count Castillon de St. Victor was chosen to succeed M. Besançon as Secretary. The Aero Clubs of Denmark, Russia and Holland were admitted to the Federation, and it was decided that the next Conference should be held at Bordeaux in 1910.

Next Year's Gordon-Bennett Flight Race.

AT the Conference of the Federation Aeronautique Internationale, which opened at Zurich on the 30th ult., the conditions for the next Gordon-Bennett race for aeroplanes were drawn up. It was decided that the distance of the course should be 100 kiloms., and the circuit not less than 5 kiloms. round. Each competitor will only be allowed one start.

An International Calendar of Events.

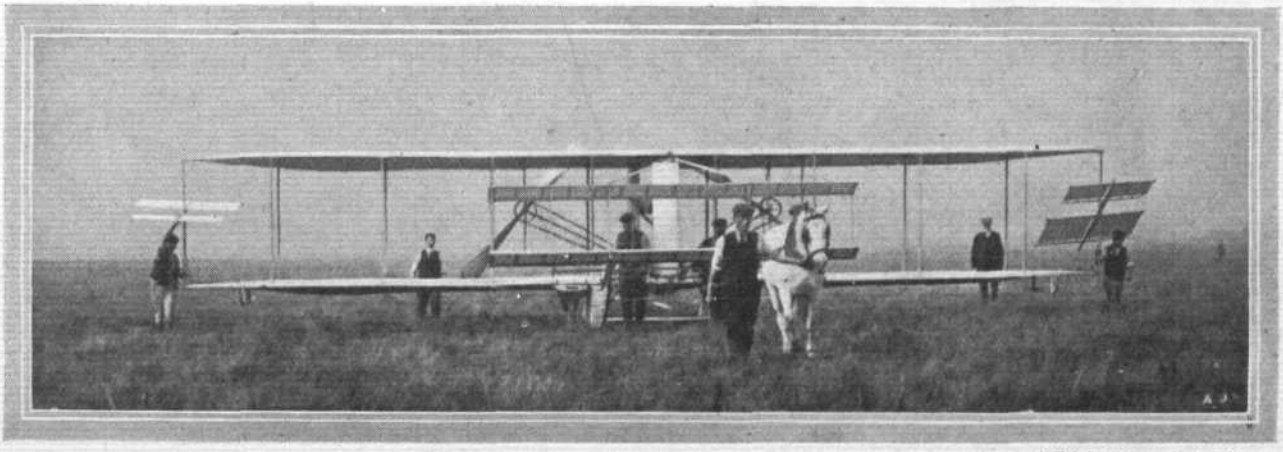
WITH a view to avoiding the very embarrassing clashing of dates of flight meetings, the F.A.I. have decided to call an International Conference on January 10th next in Paris, to draw up a calendar of events. It was resolved in principle not to authorise more than one meeting on the same date where the prizes exceeded 200,000 francs.

Aerial Conference at Nancy.

AT the International Aeronautical Congress which was held last week at Nancy, the question of regulating aerial traffic internationally, and at the same time safe-guarding national security, was one which came in for the most consideration, and a resolution was passed calling upon the Governments of the various nations to refrain from prohibitive measures, and stating that the Congress recognised that the registration of all balloons, airships, and dirigibles would form the best method of making an unrestrictive system of regulations effective.

Crown Prince of Germany Flies with Orville Wright.

SATURDAY last was indeed a red-letter day for Orville Wright, that day witnessing two achievements of which he may justly be proud. Not only did he carry the Crown Prince of Germany as a passenger on his flyer, but he also demonstrated that the Wright machine was capable of ascending to amazing heights. It was



"Flight" Copyright Photo.

Mr. J. T. C. Moore-Brabazon's new biplane, designed and constructed by Messrs. Short Bros., with which he has been making his flights at Shellbeach, being brought up to the starting rail after a flight.

about 4.30 p.m. when the Crown Prince arrived, and Orville Wright was in the air having a practice run after giving lessons to his pupils, Lieut. Engelhardt and Herr Keidel. When he came down, the Prince took the seat on Orville's right, and they started off. At first the height was restricted to about six metres from the ground, but at the urgent requests of the Crown Prince, Orville Wright gradually rose until the earth was about twenty metres below. For about 7 mins. the flyer kept on this level, and then the descent was slowly and gracefully accomplished. Subsequently the famous American announced his intention of flying high. He flew round and round in an ever ascending spiral until it is estimated that he was at a height of 1,500 ft., passengers on the Havel steamers over three miles away being able to see him gliding through space. The ascent occupied about ten minutes, while less than half that time was occupied in the return to *terra firma*. These achievements were carried out on the Bornstedter field, near Potsdam, and were watched by a vast concourse of people, who cheered lustily each time Orville Wright returned to earth. Before leaving the ground the Crown Prince presented Orville Wright, by way of a memento of the occasion, with a gold scarf pin, consisting of the initial "W" surmounted by a crown set in diamonds. On the previous Thursday, in the presence of the German Empress, Princess Victoria Louise, and Prince August Wilhelm, Orville Wright flew to a height of about 900 ft. Unfortunately, neither of these performances were officially observed, and so they cannot be accepted as world's records. All the same, there is no doubt that Rougier's record was handsomely surpassed.

Wilbur Wright Flies Over Warships.

NEW YORKERS had a further taste of what can be done with a flying machine on Monday last, when the crowds assembled along the banks of the Hudson river saw Wilbur Wright start from Governor's Island, and after crossing several liners, and after swooping down past H.M.S. Drake, fly for nearly ten miles up the Hudson river and back again. Wilbur Wright estimated that he covered about 24 miles during the 33 mins. 33 secs. he remained in the air.

Wright Brothers to Retire.

IT is reported by cable from New York that Wilbur Wright has announced that he and his brother have made their last flights in public. Henceforth they will devote themselves to the commercial exploitation of their machines, and they will only fly in future to test improvements in construction.

Learning to Fly in Three Minutes.

ON the 30th ult., a striking demonstration of the wonderfully quick way in which some men can grasp the essential principles of a flying machine was witnessed at Issy. In response to a note to the effect that the flyer he had ordered after M. Bleriot's cross-Channel flight was ready, M. Guy Blanck repaired to the famous military ground to take his first lesson. After a three-minute explanation from M. Collin, the Bleriot instructor, M. Blanck got into the driver's seat, had the motor started, and flew across the ground in a straight line. In a second flight he made several turnings. The next day he had just started when a derangement of the motor made it necessary to take a few days' rest.

Automobile Club of France to Organise an Aviation Week for 1910.

AT the committee meeting of the A.C.F., on Wednesday last, upon the proposition of the Marquis de Dion, it was decided that a grand aviation meeting should be organised to take place next July. Interviewed afterwards, the Marquis de Dion once more proclaimed that it was the aim of the A.C.F. to foster the sporting side of the aviation industry in the same way that they had looked after the automobile movement.

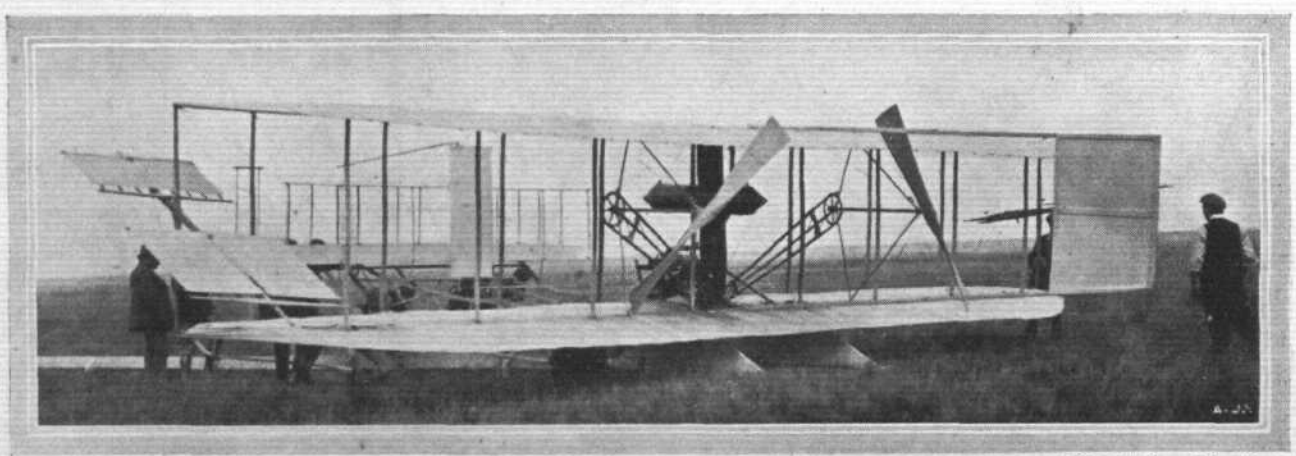
Bleriot to go to Buda Pesth.

ARRANGEMENTS are being made to give M. Bleriot a gala reception when he visits Buda Pesth from the 15th to 17th inst. He will be received officially by the Minister of Public Instruction, by the University, the Academy of Sciences and other learned Societies, and on the 17th inst. he is to make a series of flights. His machine will be on show in the Vigado Hall on the 14th and 15th.

Activity at Chalons.

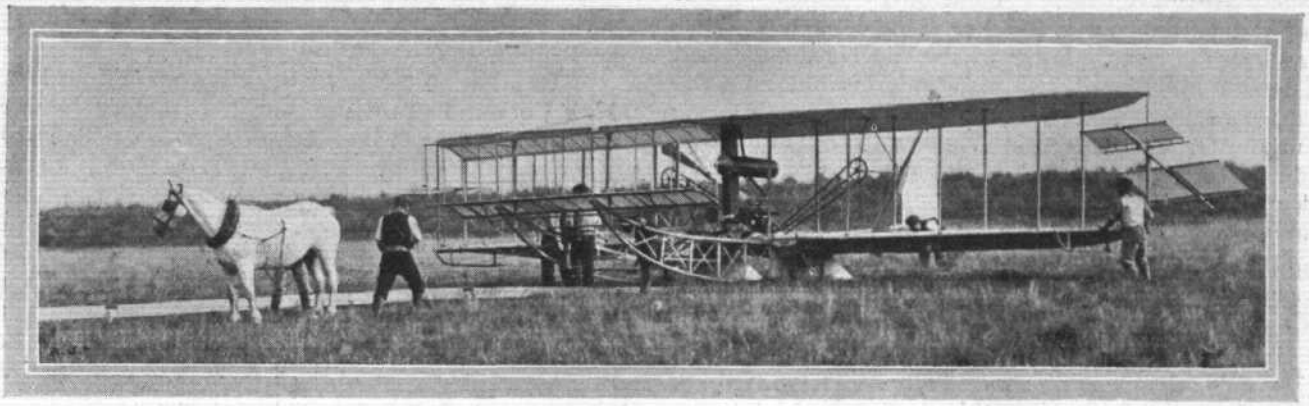
AT Chalons the teaching of the purchasers of Voisin biplanes is continued daily, and some of them make splendid progress. On the 23rd ult., M. Colliex, the instructor, on making a trip of one kilom., gave lessons to Mr. Mortimer Singer, M. Allard Ravetto, the chauffeur to the Chevalier Florio, and M. Poillot, and the last-mentioned succeeded in twice covering a distance of two kiloms., including turnings.

On the Friday and Saturday, M. Küller was taking his first lessons on the Antoinette monoplane which Latham had been practising on, but he did not meet with any measure of success. On Sunday he made his first two flights, which were between five and six hundred metres in



"Flight" Copyright Photo.

Three-quarter view, from the back, of the Short biplane, constructed for Mr. Moore-Brabazon.



"Flight" Copyright Photo.

Getting Mr. Moore-Brabazon's Short biplane in place on to the starting rail.

length. Dufour was also practising on Saturday and Sunday on his Farman biplane. On the former day he covered 10 kiloms., while the next day he flew three times round the parade ground at a height of only five metres.

Doings at Issy.

On the 24th ult., the new model Voisin was given an airing at Issy, but M. Chateau contented himself with running it along the ground for a quarter of an hour. The same day, a Danish aviator, Nerno, flew two or three times round the ground at a height of 7 or 8 metres. Maurice Clement, too, met with a little success with his Clement-Bayard biplane, getting it to leave the ground, although only for a moment. On the following day, however, he made one or two long jumps of 200 metres.

Short Flights at Dunkirk.

Last Saturday week at Dunkirk, M. Barataux, on his Wright flyer, succeeded in making a long hop of 250 metres, and hopes that now he will be able to make rapid progress.

Santos Dumont's "Darracq" Motor.

First blood, in the legal conflict between the Darracq Co. and M. Dumont, as to with whom rests the property and patent rights of the motor, made by Messrs. Darracq and Co., with which M. Dumont accomplished his recent splendid flights, has been drawn by the Darracq Co. This week an order from the French Courts was issued appointing M. Max Richard as "sequestrator" of the engine in dispute, the main question of rights being left to subsequent proceedings.

Flyer as Autograph Album.

An interesting commentary on the popularity of the little monoplane on which M. Bleriot crossed the Channel, and which occupies the place of honour at the Paris Salon, is the extraordinary number of signatures and initials which have been inscribed all over the "Continental" fabric with which the wings of this historical machine are covered.

A Hydro-Aeroplane.

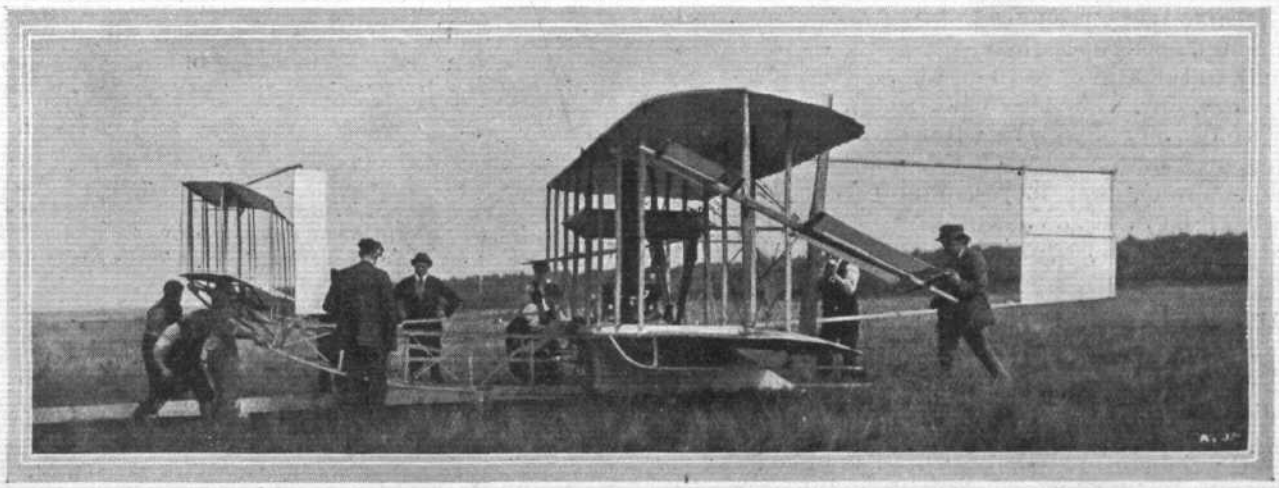
M. Henri Fabre has completed at Marseilles, and hopes to try shortly, a new combination hydro-aeroplane. The machine is of the tandem monoplane type, and mounted on two air chambers, so that it can start from and, if necessary, skim along the surface of the water. It is fitted with four 12-h.p. two-cylinder Anzani motors.

The Bordeaux Meeting.

Another honour has been accorded to the big aviation meeting which is being organised at Bordeaux next year, as the President of the French Republic has signified his consent to officially inaugurate the meeting next spring, during the course of his trip to Marmande.

Flying at Spa.

Although the Spa meeting continued during last week-end, there was very little flying, the wind and rain preventing flying to any considerable extent. On the 30th ult. the wind moderated, and Delagrange just made a couple of circuits round the course, and Le Blon went round three times. By the 2nd inst., M. Sommer



"Flight." Copyright Photo.

Side view, on the starting rail, of Mr. Moore-Brabazon's biplane, just constructed by Messrs. Short Bros.

had succeeded in repairing his machine, and flew once in the morning and again in the afternoon, each time completing seven circuits. Later in the day Delagrange had a trial with his Bleriot, and also with his old love, the Voisin, on which his early records were made. During the afternoon Comte de la Vaulx was out with the "Zodiac," and had a little excursion across the German frontier, which is only about a couple of kiloms. away from Spa.

Frankfort Flying Week.

On Saturday last when the flying week commenced, there was no prominent aviator present, and the public only saw Nervoe, the Danish aviator, who succeeded in making half-a-dozen or so short flights. The dirigibles, "Parseval" and "Ruthenberg," both "cruised" over the aerodrome during the afternoon. Rougier, Latham, de Caters and Sanchez Besa had all, it was stated, arranged to appear at Frankfort during the week.

Havre–Trouville–Havre Race.

M. Moreau, a prominent sportsman of Havre, has suggested that steps should be taken at once to organise an aeroplane race, to be held in either July or August next year, from Havre to Trouville and back, with a first prize of 25,000 francs.

Two Belgian Prizes.

Among the prizes placed at the disposal of the Aero Club de Belgique is the Mercier Prize of 5,000 francs, which will be given to the first aviator who flies, with a passenger, from Brussels to Antwerp, about 25 miles, without a stop. Another prize is the Coupe Crawhez, given by Baron Joseph de Crawhez. This is an *Objet d'Art* valued at 2,000 francs, and is for the first aviator who carries out two flights of a kilometre out and home, with starts at two different set points.

Aeroplanes for England.

Mr. C. Grahame-White, managing director of Messrs. C. Grahame-White and Co., Ltd., 1, Albemarle Street, Piccadilly, who is over in Paris at the Bleriot works, where he is gaining experience in the construction and manipulation of aeroplanes, informs us that he has placed orders for earliest delivery of Bleriot and Antoinette monoplanes, and has secured the first of the large type 3-seated Bleriot monoplanes, fitted with 80-h.p. 8-cylinder E.N.V. motor. This machine, No. 4 of the series, is guaranteed for delivery in October, and is already in an advanced stage, and will be the first of the type to come to this country. After his machine has been tested and put through its flying trials at Chalons, Mr. Grahame-White proposes to bring his monoplane to this country, and hopes then to compete for any prizes that may still remain open to be won.

The firm, Mr. Grahame-White states, is prepared to guarantee delivery of all aeroplanes of the various manufacturers on fixed dates against a substantial cash penalty for non-delivery, and they can also give immediate delivery of 8-cyl. E.N.V. aeroplane motors of various horse-power, as well as 7-cyl. Gnome motors.

All-British Aeroplane Fabric.

Messrs. C. G. Spencer and Sons, of 56A, Highbury Grove, report considerable sales of their new aeroplane fabric. They inform us it weighs 5 drams per square foot; its breaking strain is 4 cwt. to the foot, both by way of the warp and weft (waterproof at an increased weight of 10 per cent.). The price is 2*s.* per yard for the width of 44 inches, with a reduction when taken by the full length of 60 yards.

Airship News.

Hudson–Fulton Celebrations.

In addition to the flight of Wilbur Wright last week, New Yorkers had the novel sight of a race between two dirigibles, although it ended in a fiasco. The prize was £2,000, offered by the *New York World*, for a flight from New York to Albany, a distance of 140 miles, and the competitors were Capt. Baldwin, in the "California Arrow," and Mr. Geo. L. Tomlinson, in the "Gelatin." Capt. Baldwin was forced to descend soon after the start, as the vibration of his motor was shaking the framework of his car to pieces; while Mr. Tomlinson was brought down through a leak in the envelope of his dirigible after after he had been going for two hours.

Zeppelin Improvements.

As a result of the experiences with Zeppelin airships during the summer, it is reported that the new vessels will be fitted with an additional motor, making the total power 345-h.p. This will necessitate more lifting capacity, which it is understood will be raised from 15,000 cubic metres to 20,000 cubic metres.

Clement-Bayard nearly Ready.

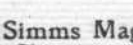
It is announced that the dirigible Clement-Bayard is now nearly completed and should be ready to commence her trials soon after the end of next fortnight. The shed at Issy is now ready to receive the airship, and the immense envelope will be taken there from the works at Levallois in a few days. Satisfactory trials were carried out with the motors about a week ago, and they have also been transferred to Issy, and the car and steering-gear are now practically finished.

A Mishap to "Parseval IV."

"Parseval IV" made a trip to Zurich and was present at the start of the Gordon-Bennett Balloon Race, but at the beginning of the week it appeared doubtful if she could be got ready in time, in view of a mishap to the motor on Thursday of last week. The vessel ascended at Bitterfeld for a trial trip, and had not travelled far before the engine stopped, and the airship became unmanageable. It was impossible to descend at once, as there were a number of factories in the neighbourhood, but eventually the dirigible drifted into an open spot where it was possible to land in safety.

A Dirigible Contest.

At the Frankfort Exhibition, the Zeppelin Prize, amounting to £500, for the smallest dirigible, has been awarded to the Ruthenberg airship, which carried out the conditions, making five trips of at least half an hour's duration, and landing each time at the starting point.



Simms Magnetos in Paris.—So great has been the demand for Simms magnetos from France that Messrs. the Simms Magneto Co. have now opened a branch house in Paris, at 12, Rue de Courcelles, Levallois-Perret, right in the heart of the automobile industry. A large stock of magneto machines, as well as reserve parts, will be kept there.

Owing to the steady increase in the demand for Hotchkiss and Delage Cars, the London and Parisian Motor Co., Ltd., of 87, Davies Street, London, W., announce that they have been reluctantly compelled to relinquish the agency for the E.N.V. aviation motors. They did not feel that they could successfully cope with same whilst their ordinary business monopolises all their energies. Readers wishing to obtain particulars of the E.N.V. engines should apply to Messrs. Warwick Wright, Ltd., of 110, High Street, Marylebone, W., who now have the sole selling rights for this motor.

CORRESPONDENCE.

*** *The name and address of the writer (not necessarily for publication)* MUST *in all cases accompany letters intended for insertion, or containing queries.*

NEW MONOPLANES AND A CRITICISM.

To the Editor of FLIGHT.

SIR,—I notice in FLIGHT of September 18th a photo of Mr. da Silva's model monoplane. I should like to say that I have personally built two of a very similar type, each 6 ft. 3 ins. span and 7 ft. frame length, propelled by twin screws of my own make, tests of which by Mr. Holt were given in FLIGHT of the 11th inst.

If Mr. Da Silva would care to see my model it will be exhibited at the Model Engineer Exhibition, Horticultural Hall, Vincent Square, on October 15th to 23rd, and as I, too, live in Kensington I should much like to know him through the Editor.

I also hope to build a full-size machine shortly, but not on the lines of either Mr. Silva's or my own models. Early this year M. Bleriot produced a machine similar in every detail except the rudder and the front of the frame to Mr. Silva's. This machine has not been repeated, but apparently given up in favour of the passenger-carrying "22's"; therefore it is fair to argue that it was not very successful.

Why, then, build another machine on the same lines? In my opinion it may be taken for a fact that successful models are not always successful in full-size aeroplanes.

I may add that I have taken in *The Automotor Journal*, and now FLIGHT, from their inception.

Yours faithfully,
C. R. SKINNER.

TERMS IN FLIGHT.

To the Editor of FLIGHT.

SIR,—Permit me to offer some alternative terms for some of those you have adopted in your admirable article of September 11th.

"Wings."—For the curved surfaces otherwise called "planes" and "ducks." These take the place in a flying machine of the bird's wings, and are used for the same purpose. Thus the monoplane has two wings, the right and left. The biplane four wings, the upper and lower pairs. The triplane six upper wings, mid wings, lower wings. So, too, the elevator or the tail, as the case may be, would have its wings right and left.

"Planes."—I suggest this obvious and simple word for those vertical flat surfaces styled "curtains" or "panels." There might be "head-plane," "mid-plane," and "tail-plane."

"Panels."—For those sub-divisions of the fabric surfaces bounded by framework.

"Countervails."—For the surfaces and structures used in maintaining lateral stability. This application of the word is perhaps novel, but it may be considered applicable generally to the extensions of the wing tips, or the trailing edge or other device, where "balancing plane" or "stabilizer" would be less appropriate. The word has the significance of a compensating or balancing device.

"Pinion" might serve as appropriate to "the flexible trailing portion of the wings," being equivalent to the "flights" or pinion feathers forming the flexible trailing edge of a bird's wing, following the bone-framed portion.

"Luff."—For the entering edge of a wing.

"Leach."—For the trailing edge or extreme margin of the wing. The edge of the flexible portion.

"Stays."—For those wire connections of the frame, set up taut, diagonal, or otherwise.

"Guys."—For those wire controls affecting horizontal structures such as the counter rails.

"Braces."—For those designed to hold the wings, tail, or head portions in place.

"Vangs."—For the staying of vertical portions.

"Yoke lines."—For the wire or rope connections to the steering-gear.

These last six suggest vessels used by the yachtsman, and really, Sir, I am inclined to the opinion that the yachting man, and the yacht-hand and rigger, will yet be the best men to manipulate the flying machine, especially when the semi-aquatic type or flying hydroplane materialises.

Faithfully yours,
T. OSBORN SMITH.

To the Editor of FLIGHT.

SIR,—With reference to your very interesting articles "Terms in Flight" in your issues of September 11th and 18th, why not call the vertical curtains of the Voisin biplane "partitions"? The word "partition" is an exact translation of the French "cloison," and seems to be more accurate than "panel" or "curtain."

Yours faithfully,
MAURICE DUCROCQ.

MOTORS FOR FLYERS.

To the Editor of FLIGHT.

SIR,—In the correspondence column of the current issue of FLIGHT we notice a letter from the managing director of the Motor Supply Co., Ltd., stating that "hundreds of orders are waiting for any firm who can produce a British-built machine, but the great obstacle in the way is that we have not yet produced a satisfactory engine for aeroplane work," and further, that during the past week, his firm have been obliged to refuse orders for at least a dozen machines because they cannot obtain delivery of a suitable British engine.

This is certainly a matter for regret, but, lest his firm should lose any more orders for want of a British motor, we would draw their attention to our engines, which we believe quite capable of upholding the prestige of Great Britain, in spite of the fact that our Continental neighbours have had a considerable start.

We are giving deliveries as fast as the engines can be turned out from the works, and are prepared to supply any number required.

We are, Sir, your obedient servants,
GREEN'S MOTOR PATENTS SYNDICATE, LTD.,
J. MILLER, Managing Director.

To the Editor of FLIGHT.

SIR,—The letter from Mr. J. W. Brown, on page 616 of FLIGHT, October 2nd, 1909, is more than interesting. He says hundreds of orders are waiting for any firm who can produce a British-built machine, but the great obstacle in the way is that we have not yet produced a satisfactory engine for aeroplanes.

I should be glad if you would kindly draw attention to the following. There are several good designers who have spent years in designing petrol engines for well-known and successful motor cars. They are engineers, but not commercial men. They have or can design good petrol engines for aeroplanes and airships, but although it costs little to build a first engine they cannot find a capitalist or a firm to manufacture their engine, because their brain and energy are concentrated on technical problems, and not on financial combinations.

I am one of them, and have made the designs of a new engine, which, judging from my experience of twelve years in designing successful petrol engines, is the right type, not only for flying machines but also for cars, boats, &c. Is it possible to find a firm or a capitalist to share in the small expenses and large profits which will result from manufacturing and selling such an engine? If there is one I should be very pleased to receive letter through the medium of your valuable journal.

Yours faithfully,
H. B.

To the Editor of FLIGHT.

SIR,—Replying to the letter from Mr. J. W. Brown appearing in your issue of October 2nd, deploring the absence of British motors for aviation, we would like to draw his attention to our work in this direction.

Our experiments cover several years and commenced with clockwork motors, but these were soon abandoned as hopeless. We afterwards tried a large number of prime movers with varying success, but discovered nothing so satisfactory as the high-speed internal-combustion type. These, however, when used for aeronautical purposes, require to be specially designed for the work, and the ordinary motor is not suitable, largely because of the difficulty experienced in suppressing the vibration set up when attached to a light frame, but principally on account of the dead, and, we consider, unnecessary weight carried in the fly-wheel, which in itself may easily total half the weight of the engine complete, and its presence would seriously handicap a flying machine, where unnecessary weight is the chief item to be eliminated.

We predict the engine that will be used for aeroplanes generally in the future is the revolving cylinder type. Correctly designed and fitted with low-tension magneto ignition, and mechanically-operated valves, it makes a very smooth running and reliable prime mover, there being little or no vibration, even with only two cylinders; also, placed in the right position, it acts as a most powerful gyroscope, and practically solves the lateral stability problem.

For the benefit of those readers to whom the principle is new, we may add that, briefly, the engine consists of a crank which is fixed, and a circular crank-case from which radiates a number of cylinders. The cylinders and crank-case revolve, forming a fly-wheel, and automatically secures air-cooling.*

[* Two such engines were illustrated in FLIGHT on April 10th, pp. 207 and 208.—ED.]

In the design we have adopted (and which we make in sizes of from 5-h-p. to 100-h.p.) the complete motors weigh from 2½ lbs. to 3¾ lbs. per horse-power developed, according to the number of cylinders used. This low weight, however, is not due to paring down necessary metal. The thickness of crank-case, cylinders, and other parts is quite equal to that usually considered necessary for car motors. It is the unique system of manufacture we employ that enables us to obtain these results. There are also many excellent features which space will not permit us to describe. We, however, shall be pleased to supply those interested with any particulars they may desire.

We certainly think Mr. Brown's pessimism a little overdone. We know of many firms in the United Kingdom who are actively engaged in the production of a successful aeroplane motor, and besides our own there are already quite a number of aerial engines on the British market. If Mr. Brown requires names we beg to refer him to Messrs. The Wolseley Tool and Motor Co., The Green's Motor Patents Syndicate, Ltd., New Engine (Motor) Co., Ltd., Aero Motors, Ltd., and others, all of which produce an excellent machine of their type. We find the British motor is greatly preferred to those of foreign manufacture, and we are obliged to work day and night in order to cope with the demand.

We trust you will pardon this intrusion on your valuable space, but taking, as we do, a keen interest in all branches of aeronautics, we do not care to see erroneous views expressed which, if allowed to pass unremarked, may create harmful impressions among the public at large, and seriously handicap a budding industry.

Yours faithfully,

THE GRANVILLE MOTOR CO.,
BATEMAN SCOTT, Secretary,

The Wolseley Tool and Motor Car Co., Ltd., write us upon this subject as follows:—

One of the numerous gentlemen who amuse themselves by writing to the Press recently stated that aeroplane orders were going abroad because British manufacturers have not yet produced a satisfactory engine. This gentleman may probably be interested to learn that the Wolseley Tool and Motor Car Co. have already supplied several of their 50-h.p. "V" aeroplane engines to intending aviators. It is worth noting, moreover, that some of these Wolseley engines have been sent to France, and one will probably be in evidence at the forthcoming meeting at Juvisy if the Voisin aeroplane to which it is fitted can be completed in time.

This engine develops 74-h.p. and weighs only 300 lbs., and we understand the Wolseley Co. are now accepting orders for delivery in eight weeks. It has repeatedly been described and illustrated in the technical journals of England and France, and we can only assume your correspondent was not very familiar with his subject.

To the Editor of FLIGHT.

SIR,—We notice a letter in your recent issue from the Motor Supply Co., apparently intended to inform the public that special aeroplane engines of English manufacture cannot be obtained. Inserted in this letter are the usual jibes against the British manufacturer, who is stated once more to be fast asleep.

Perhaps the best reply to this firm is in our advertisement which occupies the back cover of your paper in which that letter appears. We have actually supplied particulars of our aeroplane engines to the firm making this complaint, but they have taken no further steps in the matter, and one is led to assume that they prefer supplying goods of foreign manufacture while endeavouring to make the public believe that goods of English manufacture are unobtainable. We are glad to say that despite the fact that this firm cannot see their way to place with us any of the countless orders which they have the opportunity of snapping up, we are nevertheless extremely busy with these engines. We have a large number of them on order, and as a representative of the English manufacturers, who have always been maligned as being so incapable of making an effort, perhaps we may be permitted to say that not only have our men been engaged during the maximum number of hours on ordinary working days, but that they have worked full time on Saturdays and Sundays. We think this will make apparent to your readers the gross injustice of the letter from the Motor Supply Co., and the falseness of the information which they seek to give.

May we add to this letter that the one thing which is holding back the development of the aeroplane in this country is the lack of money. We think you will find that in France this sport and industry has been largely developed by the wealth accumulated by the manufacturers connected with the motor car industry, and as the Motor Supply Co., who we believe chiefly sell foreign cars, must know, an enormous proportion of that wealth has been extracted from this country. What English manufacturers need is not the spur and stimulation of heartbreaking competition, with manufacturers from all over the world competing for our market, but the stimulation which comes from profits. When happier times come we believe that England will be found once more taking the lead in the great forward movements, as she did in the old days, when we were the greatest engineering country in the world.

Yours faithfully,
J. C. MORT.

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NEW COMPANIES REGISTERED.

Aerial Manufacturing Co. of Great Britain and Ireland, Ltd., The Aviation Grounds, Woodham Ferris, Essex.—Capital £2,000, in £1 shares.

International Aviation Committee, Ltd., 32, Piccadilly Circus, W.—Capital £10,000, in £1 shares. Formed to acquire the business of the International Aviation Committee carried on by F. Harris, H. Keen, C. Hastings, L. Hamon, and H. Martens at 32, Piccadilly Circus, W.

Midland Aeroplane Co., Ltd., 274, Corporation Street, Birmingham.—Capital £2,000, in £1 shares. Manufacturers of and dealers in airships, aeroplanes, balloons, flying machines, &c.

J. Stenbury and Co., Ltd., 26, Shaftesbury Avenue, W.—Capital £1,000, in £1 shares. Formed to acquire the business of a dealer in motor cars and accessories carried on by J. Stenbury at 173, Piccadilly, W., together with the benefit of any agencies in connection therewith for the sale of motor cars, accessories, and flying machines, for which the said vendor is in negotiation (including the agencies for E. Koechlin and of the Société Générale de Pneumatiques, both of Paris). First directors, J. Stenbury and Mrs. M. Stenbury.

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